

PRACTICE EXAM 3: CCAT GRADE 4 SIMULATION (176 QUESTIONS)

This practice exam contains 176 multiple-choice questions arranged in the same three groups as the real test: Verbal, Quantitative, and Nonverbal. Each question has four answer choices, labeled A through D, and only one is correct. Describe each rule in your own words before choosing, mark an answer for every question, and use the answer key and explanations afterward to review every item, including those you answered correctly. The real CCAT times each of its nine tests at 10 minutes, so you may wish to practice some sections with a timer.

1. Bat is to baseball as racket is to ____.

- A. soccer
- B. tennis
- C. hockey
- D. swimming

2. Skates are to ice as skis are to ____.

- A. snow
- B. sand
- C. grass
- D. water

3. Goal is to soccer as basket is to ____.

- A. tennis
- B. golf
- C. running
- D. basketball

4. Swimmer is to pool as skier is to ____.

- A. gym
- B. rink
- C. slope
- D. court

5. Helmet is to head as knee pad is to ____.

- A. elbow
- B. foot
- C. shoulder
- D. knee

6. Win is to lose as victory is to ____.

- A. prize
- B. game
- C. defeat
- D. team

7. Chess is to board game as soccer is to ____.

- A. team
- B. sport
- C. field
- D. ball

8. Coach is to player as teacher is to ____.

- A. student
- B. school
- C. desk
- D. lesson

9. Marathon is to long as sprint is to ____.

- A. slow
- B. short
- C. tired
- D. late

10. Dribble is to basketball as serve is to ____.

- A. volleyball
- B. baseball
- C. hockey
- D. football

11. Puck is to hockey as shuttlecock is to ____.

- A. tennis
- B. golf
- C. soccer
- D. badminton

12. Cards are to poker as pieces are to ____.

- A. tennis

- B. swimming
- C. chess
- D. soccer

13. Referee is to whistle as carpenter is to ____.

- A. table
- B. shop
- C. board
- D. hammer

14. Gold is to first as bronze is to ____.

- A. third
- B. second
- C. fourth
- D. last

15. Athlete is to training as musician is to ____.

- A. concert
- B. practice
- C. song
- D. band

16. Final whistle is to game as finish line is to ____.

- A. coach
- B. stadium
- C. race
- D. crowd

17. Medal is to winner as diploma is to ____.

- A. school
- B. teacher
- C. graduate
- D. exam

18. Teammate is to rival as friend is to ____.

- A. partner
- B. enemy
- C. player
- D. coach

19. Gymnast is to balance as sprinter is to ____.

- A. race
- B. track
- C. shoes
- D. speed

20. Endurance is to marathon as accuracy is to ____.

- A. archery
- B. running
- C. swimming
- D. wrestling

21. The players drank water because they were very ____ after the long game.

- A. bored
- B. cold
- C. proud
- D. thirsty

22. Marta wore a helmet to keep her head _____ when she rode her bike.

- A. safe
- B. tall
- C. loud
- D. slow

23. The referee blew her _____ to stop the game.

- A. pencil
- B. whistle
- C. ticket
- D. jersey

24. Our team practised every day, so we got much _____ at passing.

- A. worse
- B. smaller
- C. better
- D. colder

25. The goalie made a great _____ and kept the ball out of the net.

- A. lunch

- B. save
- C. seat
- D. song

26. It was a ____ game, and the score stayed tied until the last second.

- A. close
- B. easy
- C. quiet
- D. messy

27. Leo was too ____ to swim across the lake, so he rested halfway.

- A. excited
- B. rich
- C. loud
- D. exhausted

28. Because the field was ____ from the rain, the players kept slipping.

- A. dusty
- B. dry
- C. muddy
- D. bright

29. The chess club members must ____ carefully before moving each piece.

- A. jump
- B. think
- C. sing
- D. wave

30. The team felt ____ when they lost, but the coach told them to try again.

- A. delighted
- B. sleepy
- C. curious
- D. disappointed

31. Ava was ____ about the big race, so her hands shook at the start line.

- A. sleepy
- B. careless
- C. nervous
- D. bored

32. Although the other team was bigger, our players were ____ and won by outsmarting them.

- A. clever
- B. clumsy
- C. lonely
- D. lazy

33. The runner began slowly to ____ her strength for the final lap.

- A. waste
- B. lose
- C. conserve
- D. borrow

34. Each player had to ____ the rules before the tournament could start.

- A. review
- B. ignore
- C. break
- D. hide

35. The judges were _____, giving scores based only on skill and not on which skater they liked.

- A. biased
- B. impartial
- C. jealous
- D. cheerful

36. The gymnast was so _____ that she could twist and bend her body in any direction.

- A. stiff
- B. tardy
- C. rigid
- D. flexible

37. The team's victory was _____, because nobody had expected the underdogs to win.

- A. surprising
- B. predictable
- C. ordinary
- D. boring

38. After the injury, the runner's recovery was _____, taking many months instead of a few weeks.

- A. sudden

- B. speedy
- C. careless
- D. gradual

39. Because the climber had trained so ____, she handled the steep wall with ease.

- A. rarely
- B. lazily
- C. thoroughly
- D. carelessly

40. The first half of the match was ____, but the second half was so ____ that fans stood up and cheered.

- A. exciting, dull
- B. dull, exciting
- C. dull, boring
- D. calm, quiet

41. Which word belongs with: soccer, hockey, tennis?

- A. helmet
- B. whistle
- C. basketball
- D. stadium

42. Which word belongs with: bat, racket, stick?

- A. goal
- B. field
- C. medal
- D. paddle

43. Which word belongs with: first, second, third?

- A. winner
- B. fourth
- C. prize
- D. medal

44. Which word belongs with: chess, checkers, Monopoly?

- A. Scrabble
- B. tennis
- C. swimming
- D. karate

45. Which word belongs with: referee, coach, goalie?

- A. ball
- B. jersey
- C. goal
- D. captain

46. Which word belongs with: jersey, helmet, shin guards?

- A. cleats
- B. whistle
- C. net
- D. scoreboard

47. Which word belongs with: pitch, throw, toss?

- A. catch
- B. drop
- C. hurl
- D. hold

48. Which word belongs with: pool, rink, court?

- A. trophy
- B. field
- C. ball
- D. team

49. Which word belongs with: marble, dice, cards?

- A. pencil
- B. spoon
- C. lamp
- D. puzzle

50. Which word belongs with: hockey, curling, skating?

- A. golf
- B. skiing
- C. cycling
- D. swimming

51. Which word belongs with: quarterback, striker, pitcher?

- A. stadium

- B. helmet
- C. defender
- D. ticket

52. Which word belongs with: marathon, triathlon, relay?

- A. decathlon
- B. stadium
- C. uniform
- D. coach

53. Which word belongs with: scoreboard, stopwatch, timer?

- A. racket
- B. helmet
- C. clock
- D. towel

54. Which word belongs with: rapid, speedy, swift?

- A. heavy
- B. quick
- C. slow
- D. gentle

55. Which word belongs with: cheer, shout, yell?

- A. roar
- B. whisper
- C. mumble
- D. sigh

56. Which word belongs with: bat, glove, base?

- A. goal
- B. net
- C. puck
- D. mound

57. Which word belongs with: tournament, league, season?

- A. player
- B. playoff
- C. ball
- D. uniform

58. Which word belongs with: sturdy, strong, tough?

- A. mighty
- B. weak
- C. fragile
- D. thin

59. Which word belongs with: athletic, energetic, nimble?

- A. sluggish
- B. clumsy
- C. agile
- D. weary

60. Two number pairs follow the same rule: $2 : 8$ and $3 : 12$. Which number goes with 5 ($5 : ?$) in the same way?

- A. 25
- B. 15
- C. 10
- D. 20

61. Two number pairs follow the same rule: $6 : 2$ and $9 : 3$. Which number goes with 12 ($12 : ?$) in the same way?

- A. 8
- B. 3
- C. 4
- D. 9

62. Two number pairs follow the same rule: $3 : 8$ and $5 : 10$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 14
- B. 19
- C. 13
- D. 18

63. Two number pairs follow the same rule: $10 : 6$ and $16 : 12$. Which number goes with 25 ($25 : ?$) in the same way?

- A. 29
- B. 22
- C. 19
- D. 21

64. Two number pairs follow the same rule: $4 : 20$ and $7 : 35$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 36
- B. 45
- C. 14
- D. 54

65. Two number pairs follow the same rule: $24 : 6$ and $40 : 10$. Which number goes with 60 ($60 : ?$) in the same way?

- A. 56
- B. 20
- C. 12
- D. 15

66. Two number pairs follow the same rule: $2 : 5$ and $6 : 9$. Which number goes with 11 ($11 : ?$) in the same way?

- A. 8
- B. 17
- C. 14
- D. 13

67. Two number pairs follow the same rule: $5 : 25$ and $3 : 9$. Which number goes with 7 ($7 : ?$) in the same way?

- A. 49
- B. 14
- C. 42
- D. 56

68. Two number pairs follow the same rule: $12 : 4$ and $21 : 7$. Which number goes with 30 ($30 : ?$) in the same way?

- A. 27
- B. 10
- C. 15
- D. 20

69. Two number pairs follow the same rule: $2 : 7$ and $4 : 11$. Which number goes with 8 ($8 : ?$) in the same way?

- A. 16
- B. 20
- C. 19
- D. 13

70. Two number pairs follow the same rule: $9 : 3$ and $15 : 9$. Which number goes with 22 ($22 : ?$) in the same way?

- A. 16
- B. 28
- C. 14
- D. 7

71. Two number pairs follow the same rule: $4 : 24$ and $6 : 36$. Which number goes with 8 ($8 : ?$) in the same way?

- A. 14
- B. 40
- C. 54
- D. 48

72. Two number pairs follow the same rule: $18 : 11$ and $25 : 18$. Which number goes with 40 ($40 : ?$) in the same way?

- A. 47
- B. 33
- C. 30
- D. 35

73. Two number pairs follow the same rule: $2 : 9$ and $5 : 21$. Which number goes with 7 ($7 : ?$) in the same way?

- A. 28
- B. 35
- C. 29
- D. 11

74. Two number pairs follow the same rule: $35 : 7$ and $60 : 12$. Which number goes with 85 ($85 : ?$) in the same way?

- A. 80
- B. 17
- C. 15
- D. 25

75. Two number pairs follow the same rule: $3 : 30$ and $8 : 80$. Which number goes with 6 ($6 : ?$) in the same way?

- A. 60
- B. 9
- C. 36
- D. 66

76. Two number pairs follow the same rule: $12 : 3$ and $20 : 11$. Which number goes with 31 ($31 : ?$) in the same way?

- A. 40
- B. 20
- C. 24
- D. 22

77. Two number pairs follow the same rule: $4 : 13$ and $6 : 19$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 27
- B. 28
- C. 30
- D. 18

78. Two number pairs follow the same rule: $6 : 10$ and $10 : 18$. Which number goes with 13 ($13 : ?$) in the same way?

- A. 26
- B. 15
- C. 20
- D. 24

79. Two number pairs follow the same rule: $3 : 10$ and $5 : 26$. Which number goes with 7 ($7 : ?$) in the same way?

- A. 49
- B. 36
- C. 50
- D. 15

80. Solve: $8 + ? = 25$. What number goes in the blank?

- A. 17
- B. 33
- C. 16
- D. 18

81. Solve: $? \times 8 = 56$. What number goes in the blank?

- A. 8
- B. 6
- C. 7
- D. 48

82. Solve: $52 - ? = 19$. What number goes in the blank?

- A. 33
- B. 71
- C. 34
- D. 32

83. Solve: $72 \div ? = 9$. What number goes in the blank?

- A. 81
- B. 7
- C. 63
- D. 8

84. Solve: $? - 17 = 34$. What number goes in the blank?

- A. 17
- B. 51
- C. 52
- D. 41

85. Solve: $6 \times ? = 54$. What number goes in the blank?

- A. 8
- B. 10
- C. 48
- D. 9

86. Which sign makes this true? $8 ? 5 = 40$

- A. plus
- B. minus
- C. times
- D. divided by

87. Solve: $5 \times ? = 18 + 12$. What number goes in the blank?

- A. 6
- B. 30
- C. 7
- D. 5

88. Solve: $3 \times ? + 4 = 25$. What number goes in the blank?

- A. 9
- B. 7
- C. 21

D. 8

89. Solve: $? \times 4 - 6 = 22$. What number goes in the blank?

A. 28

B. 7

C. 4

D. 5

90. Which sign makes this true? $15 ? 9 = 6$

A. plus

B. times

C. minus

D. divided by

91. Solve: $? \times ? = 81$, and both blanks hold the same number. What number is it?

A. 9

B. 18

C. 8

D. 27

92. Solve: $\text{star} + \text{star} + 8 = 20$. Each star stands for the same number. What number is the star?

A. 12

B. 14

C. 10

D. 6

93. Solve: $? \div 3 + 5 = 12$. What number goes in the blank?

- A. 21
- B. 7
- C. 36
- D. 15

94. Solve: $100 \div ? = 4 \times 5$. What number goes in the blank?

- A. 20
- B. 4
- C. 5
- D. 25

95. Solve: $90 - ? - 35 = 20$. What number goes in the blank?

- A. 55
- B. 45
- C. 25
- D. 35

96. Solve: $(? - 3) \times 4 = 24$. What number goes in the blank?

- A. 6
- B. 9
- C. 27
- D. 12

97. Which sign makes this true? $28 ? 4 = 7$

- A. divided by
- B. plus
- C. minus
- D. times

98. Each square stands for the same number, and $\text{square} + \text{square} + \text{square} + \text{square} = 36$. What is $\text{square} - 2$?

- A. 9
- B. 34
- C. 12
- D. 7

99. What number comes next? 9, 18, 27, 36, ?

- A. 54
- B. 43
- C. 45
- D. 47

100. What number comes next? 75, 70, 65, 60, ?

- A. 50
- B. 55
- C. 52
- D. 57

101. What number comes next? 5, 7, 9, 11, ?

- A. 13
- B. 12

- C. 15
- D. 14

102. What number comes next? 11, 22, 33, 44, ?

- A. 54
- B. 55
- C. 66
- D. 45

103. What number comes next? 3, 9, 27, 81, ?

- A. 162
- B. 324
- C. 243
- D. 108

104. What number comes next? 96, 48, 24, 12, ?

- A. 3
- B. 8
- C. 4
- D. 6

105. What number comes next? 4, 8, 16, 32, ?

- A. 48
- B. 64
- C. 36
- D. 128

106. What number comes next? 729, 243, 81, 27, ?

- A. 3
- B. 18
- C. 9
- D. 6

107. What number comes next? 2, 5, 9, 14, 20, ?

- A. 26
- B. 28
- C. 25
- D. 27

108. What number comes next? 2, 3, 5, 8, 12, ?

- A. 17
- B. 16
- C. 18
- D. 20

109. What number comes next? 100, 98, 94, 88, ?

- A. 80
- B. 82
- C. 84
- D. 78

110. What number comes next? 2, 4, 8, 14, 22, ?

- A. 30
- B. 28
- C. 34
- D. 32

111. What number comes next? 3, 4, 6, 7, 9, 10, ?

- A. 11
- B. 12
- C. 13
- D. 14

112. What number comes next? 9, 11, 8, 10, 7, 9, ?

- A. 8
- B. 7
- C. 6
- D. 11

113. What number comes next? 20, 17, 21, 18, 22, ?

- A. 23
- B. 26
- C. 19
- D. 18

114. What number comes next? 1, 5, 2, 10, 3, 15, ?

- A. 20
- B. 5
- C. 6

D. 4

115. What number comes next? 7, 14, 12, 24, 22, 44, ?

A. 42

B. 46

C. 88

D. 40

116. What number comes next? 2, 6, 7, 21, 22, 66, ?

A. 68

B. 67

C. 198

D. 88

117. What number comes next? 2, 5, 11, 23, 47, ?

A. 94

B. 95

C. 96

D. 93

118. What number comes next? 4, 7, 13, 25, 49, ?

A. 98

B. 96

C. 73

D. 97

119. In a 2 by 2 grid, the top row shows a small black square, then a large black square. The bottom row shows a small white triangle, then a missing figure. Which figure completes the grid?

- A. a large white triangle
- B. a small white triangle
- C. a large black triangle
- D. a large white square

120. In a 2 by 2 grid, the top row shows one black star, then three black stars. The bottom row shows two white circles, then a missing figure. Which figure completes the grid?

- A. three white circles
- B. four black circles
- C. four white circles
- D. four white stars

121. In a 2 by 2 grid, the top row shows a white square with a black dot inside, then a white square with no dot. The bottom row shows a white triangle with a black dot inside, then a missing figure. Which figure completes the grid?

- A. a white triangle with a black dot
- B. a white triangle with no dot
- C. a black triangle with no dot
- D. a white square with no dot

122. In a 2 by 2 grid, the top row shows an arrow pointing to the top-right corner, then an arrow pointing to the bottom-left corner. The bottom row shows an arrow pointing to the top-left corner, then a missing figure. Which figure completes the grid?

- A. an arrow pointing to the top-left corner
- B. an arrow pointing to the top-right corner
- C. an arrow pointing to the bottom-right corner

D. an arrow pointing to the bottom-left corner

123. In a 2 by 2 grid, the top row shows a black dot at the top of its box, then a black dot at the bottom of its box. The bottom row shows a black dot at the left of its box, then a missing figure. Which figure completes the grid?

- A. a black dot at the left of its box
- B. a black dot at the top of its box
- C. a black dot in the middle of its box
- D. a black dot at the right of its box

124. In a 2 by 2 grid, the top row shows three small white squares, then two small white squares. The bottom row shows four small black triangles, then a missing figure. Which figure completes the grid?

- A. three small black triangles
- B. five small black triangles
- C. three small white triangles
- D. two small black triangles

125. In a 2 by 2 grid, the top row shows one black circle, then two white circles. The bottom row shows two black squares, then a missing figure. Which figure completes the grid?

- A. three white squares
- B. three black squares
- C. two white squares
- D. three white circles

126. A grid has two rows of three figures. Row 1 shows a white circle with no lines, a white circle with one line through the middle, and a white circle with two lines through the middle. Row 2 shows a white square with no lines, a white square with one line, and a missing figure. Which figure completes the grid?

- A. a white square with three lines
- B. a white square with two lines
- C. a white circle with two lines
- D. a white square with no lines

127. A grid has two rows of three figures. Row 1 shows an arrow pointing up, then right, then down. Row 2 shows an arrow pointing left, then up, and a missing figure. Which figure completes the grid?

- A. an arrow pointing left
- B. an arrow pointing down
- C. an arrow pointing right
- D. an arrow pointing up

128. A grid has two rows of three figures. Row 1 shows a triangle, a square, and a pentagon. Row 2 shows a square, a pentagon, and a missing figure. Which figure completes the grid?

- A. a triangle
- B. a square
- C. an octagon
- D. a hexagon

129. A grid has two rows of three figures. Row 1 shows one white dot, two black dots, and three striped dots. Row 2 shows one white star, two black stars, and a missing figure. Which figure completes the grid?

- A. three striped stars
- B. three black stars
- C. three striped dots
- D. two striped stars

130. A grid has two rows of three figures. Row 1 shows a white square with a black dot in the top-left corner, then in the top-right corner, then in the bottom-right corner. Row 2 shows a white circle with a

black dot in the top-left corner, then in the top-right corner, and a missing figure. Which figure completes the grid?

- A. a white circle with a black dot in the bottom-left corner
- B. a white circle with a black dot in the bottom-right corner
- C. a white circle with a black dot in the top-left corner
- D. a white circle with a black dot in the center

131. In a 2 by 2 grid, the top row shows a white arrow pointing right with a black dot above it, then a white arrow pointing left with a black dot above it. The bottom row shows a black arrow pointing right with a white dot below it, then a missing figure. Which figure completes the grid?

- A. a black arrow pointing right with a white dot below it
- B. a black arrow pointing left with a white dot above it
- C. a white arrow pointing left with a white dot below it
- D. a black arrow pointing left with a white dot below it

132. In a 2 by 2 grid, the top row shows a large white circle with a small black square inside, then a large black square with a small white circle inside. The bottom row shows a large white triangle with a small black star inside, then a missing figure. Which figure completes the grid?

- A. a large black triangle with a small white star inside
- B. a large white star with a small black triangle inside
- C. a large black star with a small white triangle inside
- D. a large black star with a small black triangle inside

133. A grid has two rows of three figures. Row 1 shows a white circle, a black circle, and a striped circle. Row 2 shows a striped square, a white square, and a missing figure. Which figure completes the grid?

- A. a white square
- B. a black square

- C. a striped square
- D. a black circle

134. A grid has three rows of three figures. Row 1 shows a star, a heart, and a moon. Row 2 shows a heart, a moon, and a star. Row 3 shows a moon, a star, and a missing figure. Which figure completes the grid?

- A. a moon
- B. a star
- C. a heart
- D. a sun

135. A grid has three rows of three figures. Row 1 shows a small circle, a medium circle, and a large circle. Row 2 shows a medium circle, a large circle, and a small circle. Row 3 shows a large circle, a small circle, and a missing figure. Which figure completes the grid?

- A. a medium circle
- B. a small circle
- C. a large circle
- D. a medium square

136. A grid has three rows of three figures. Row 1 shows one white square, two white squares, and three white squares. Row 2 shows two white squares, three white squares, and four white squares. Row 3 shows three white squares, four white squares, and a missing figure. Which figure completes the grid?

- A. four white squares
- B. six white squares
- C. five white circles
- D. five white squares

137. A grid has three rows of three figures. Row 1 shows a white circle, a black square, and a black circle. Row 2 shows a white triangle, a black star, and a black triangle. Row 3 shows a striped square, a white circle, and a missing figure. Which figure completes the grid?

- A. a striped circle
- B. a white square
- C. a white circle
- D. a black square

138. A grid has three rows of three figures. Row 1 shows one small white circle, two medium white circles, and three large white circles. Row 2 shows one small black square, two medium black squares, and three large black squares. Row 3 shows one small striped triangle, two medium striped triangles, and a missing figure. Which figure completes the grid?

- A. three medium striped triangles
- B. three large white triangles
- C. two large striped triangles
- D. three large striped triangles

139. A square sheet is folded in half by bringing the right side over to the left side. One hole is punched in the center of the folded shape. How many holes does the unfolded sheet have?

- A. 1
- B. 3
- C. 2
- D. 4

140. A square sheet is folded in half by bringing the top edge down onto the bottom edge. One hole is punched in the middle of the folded shape, close to the fold. Which description shows the unfolded sheet?

- A. two holes in a vertical line, one just above and one just below the center

- B. two holes in a row, one just left and one just right of the center
- C. one hole in the exact center of the sheet
- D. two holes, one near the top edge and one near the bottom edge

141. A square sheet is folded in half, and then folded in half again the other way to make a small square. One hole is punched in the middle of the small square, going through every layer. How many holes does the unfolded sheet have?

- A. 2
- B. 4
- C. 1
- D. 8

142. A square sheet is folded like a letter, so the paper is three layers thick. One hole is punched through all three layers in the middle of the folded strip. How many holes does the unfolded sheet have?

- A. 2
- B. 1
- C. 6
- D. 3

143. A square sheet is folded in half once, and three holes are punched in a vertical line through the folded shape. How many holes does the unfolded sheet have?

- A. 6
- B. 3
- C. 5
- D. 9

144. A square sheet is folded in half by bringing the bottom edge up to the top edge. One hole is punched near the top-right corner of the folded shape. Which description shows the unfolded sheet?

- A. two holes close to the left edge, near its top and bottom corners
- B. two holes close to the top edge, near its two top corners
- C. two holes close to the right edge, near its top and bottom corners
- D. one hole close to the top-right corner of the sheet

145. A square sheet is folded in half once. One hole is punched exactly on the crease, and two more holes are punched away from the crease. How many holes does the unfolded sheet have?

- A. 3
- B. 5
- C. 4
- D. 6

146. A square sheet is folded corner to corner by bringing the top-left corner onto the bottom-right corner. One hole is punched near the bottom-right corner of the folded triangle. Which description shows the unfolded sheet?

- A. two holes, near the top-right and bottom-left corners
- B. one hole, near the bottom-right corner only
- C. two holes, near the bottom-right and top-left corners
- D. four holes, one near each corner

147. A square sheet is folded in half three times, and three holes are punched through the thick folded shape. How many holes does the unfolded sheet have?

- A. 24
- B. 12
- C. 9
- D. 16

148. A square sheet is folded in half by bringing the bottom edge up to the top edge, and then in half again by bringing the right edge over to the left edge. One hole is punched near the top edge of the small folded square, halfway across it. Which description shows the unfolded sheet?

- A. four holes: two near the left edge, two near the right edge
- B. four holes in a vertical line down the center
- C. two holes: one near the top edge, one near the bottom edge
- D. four holes: two near the top edge, two near the bottom edge

149. A square sheet is folded in half by bringing the bottom edge up to the top edge, and then in half again by bringing the left edge over to the right edge. One hole is punched close to the bottom edge of the small folded square, halfway across it. Which description shows the unfolded sheet?

- A. four holes, two just left and two just right of the middle line down the sheet
- B. four holes, one near each corner of the sheet
- C. two holes, one just above and one just below the middle line across the sheet
- D. four holes, two just above and two just below the middle line across the sheet

150. A square sheet is folded in half by bringing the bottom edge up to the top edge, and then in half again by bringing the left edge over to the right edge. One hole is punched near the top edge of the small folded square, close to its left side. Which description shows the unfolded sheet?

- A. four holes, a close pair at left middle and a close pair at right middle
- B. four holes, one close to each corner of the whole sheet
- C. four holes, a close pair at top center and a close pair at bottom center
- D. two holes, one at the top center and one at the bottom center

151. A square sheet is folded in half by bringing the left side over to the right side. Two holes are punched, one high and near the crease, and one low and near the open edge. Which description shows the unfolded sheet?

- A. four holes: a close pair at the bottom center and a far-apart pair high near the side edges

- B. four holes: a close pair at the top center and a far-apart pair low near the side edges
- C. four holes: a close pair at the top center and a close pair at the bottom center
- D. two holes: one at the top center and one low near the right edge

152. A square sheet is folded in half two times, each time by bringing the top edge down to the bottom edge, so the folded paper is a thin strip. One hole is punched in the middle of the strip. Which description shows the unfolded sheet?

- A. four holes in a vertical line, evenly spaced down the middle
- B. four holes in a horizontal row, evenly spaced across the middle
- C. four holes in a square, one in each quarter of the sheet
- D. two holes in a vertical line down the middle

153. A square sheet is folded in half two times, and four holes are punched through the thick folded shape. How many holes does the unfolded sheet have?

- A. 8
- B. 12
- C. 4
- D. 16

154. A square sheet is folded in half once. Then the folded paper is folded in thirds like a letter. One hole is punched through all the layers. How many holes does the unfolded sheet have?

- A. 3
- B. 5
- C. 6
- D. 9

155. A square sheet is folded in half by bringing the left edge over to the right edge, and then in half again the same way. One hole is punched near the crease made by the last fold. Which description shows the unfolded sheet?

- A. four holes in a row, in two close pairs, one in each half
- B. four holes in a row, evenly spaced across the sheet, with no pairs
- C. four holes in a row, in two close pairs, at the far edges
- D. two holes in a row, one in each half of the sheet

156. A square sheet is folded in half twice. Two holes are punched through the folded paper, one near the corner at the sheet's center and one near the opposite open corner. How many holes does the unfolded sheet have?

- A. 4
- B. 8
- C. 6
- D. 2

157. A square sheet is folded corner to corner to make a triangle, and then that triangle is folded corner to corner again to make a smaller triangle. One hole is punched near the middle of the longest edge of the small triangle. Which description shows the unfolded sheet?

- A. four holes, one near each corner of the sheet
- B. two holes, near the middle of opposite sides
- C. four holes in a row across the center
- D. four holes, one near the middle of each side

158. Three figures are shown. The first is a square. The second is a rectangle. The third is a diamond. Each has exactly four straight sides. Which figure is most like the first three?

- A. a triangle
- B. a parallelogram
- C. a pentagon
- D. a circle

159. Three figures are shown. The first is a small white square. The second is a small black triangle. The third is a small striped circle. Which figure is most like the first three?

- A. a small black star
- B. a large black star
- C. a medium black star
- D. a very large black star

160. Three figures are shown. The first shows two black circles. The second shows two white squares. The third shows two striped triangles. Which figure is most like the first three?

- A. one white star
- B. three white stars
- C. two white stars
- D. four white stars

161. Three figures are shown. The first is a white circle with three dots inside. The second is a black square with three dots inside. The third is a striped triangle with three dots inside. Which figure is most like the first three?

- A. a white star with three dots inside
- B. a white star with two dots inside
- C. a white star with four dots inside
- D. a white star with one dot inside

162. Three figures are shown. The first is a circle filled with tiny dots. The second is a square filled with tiny dots. The third is a triangle filled with tiny dots. Which figure is most like the first three?

- A. a star filled with stripes
- B. a star filled with solid black
- C. a star left plain white
- D. a star filled with tiny dots

163. Three figures are shown. The first is three circles stacked in a vertical column. The second is three squares stacked in a vertical column. The third is three triangles stacked in a vertical column. Which figure is most like the first three?

- A. three stars in a horizontal row
- B. two stars stacked in a vertical column
- C. three stars stacked in a vertical column
- D. three stars along a diagonal

164. Three figures are shown. The first is a black circle, a white circle, and a black circle in a row. The second is a black square, a white square, and a black square in a row. The third is a black triangle, a white triangle, and a black triangle in a row. Which figure is most like the first three?

- A. a white star, a black star, and a white star
- B. a black star, a white star, and a black star
- C. a black star, a black star, and a white star
- D. a black star, a white star, and a white star

165. Three figures are shown. The first is a circle with a wavy edge. The second is a square with a wavy edge. The third is a triangle with a wavy edge. Which figure is most like the first three?

- A. a star with a smooth edge
- B. a star with a zigzag edge
- C. a star with a dotted edge
- D. a star with a wavy edge

166. Three figures are shown. The first is a square with a black dot in the exact center. The second is a circle with a black dot in the exact center. The third is a triangle with a black dot in the exact center. Which figure is most like the first three?

- A. a pentagon with a black dot in the exact center
- B. a pentagon with a black dot near the top
- C. a pentagon with a black dot in a corner
- D. a pentagon with a black dot on the edge

167. Three figures are shown. The first is a circle with exactly one quarter shaded black. The second is a square with exactly one quarter shaded black. The third is a triangle with exactly one quarter shaded black. Which figure is most like the first three?

- A. a hexagon with one half shaded
- B. a hexagon with one quarter shaded
- C. a hexagon with three quarters shaded
- D. a hexagon with nothing shaded

168. Three figures are shown. The first is a circle sitting in the top-left corner of a white box. The second is a triangle sitting in the top-left corner of a white box. The third is a star sitting in the top-left corner of a white box. Which figure is most like the first three?

- A. a heart in the bottom-left corner of a white box
- B. a heart in the center of a white box
- C. a heart in the top-left corner of a white box
- D. a heart in the top-right corner of a white box

169. Three figures are shown. The first is a small circle, a medium circle, and a large circle in a row, left to right. The second is a small square, a medium square, and a large square in a row, left to right. The third is a small triangle, a medium triangle, and a large triangle in a row, left to right. Which figure is most like the first three?

- A. three hearts getting smaller from left to right
- B. three hearts getting larger from left to right
- C. three hearts that are all the same size
- D. three hearts that go large, small, large

170. Three figures are shown. The first is a triangle with its point facing left. The second is an arrow with its point facing left. The third is a sign shaped like a house lying on its side with its point facing left. Which figure is most like the first three?

- A. a chevron pointing left
- B. a chevron pointing right
- C. a chevron pointing up
- D. a chevron pointing down

171. Three figures are shown. The first is the capital letter E. The second is the capital letter F. The third is the capital letter H. Each letter is made only of straight lines. Which figure is most like the first three?

- A. the capital letter S
- B. the capital letter O
- C. the capital letter C
- D. the capital letter L

172. Three figures are shown. The first is the capital letter C. The second is the capital letter U. The third is the capital letter V. Each letter is open, with no fully enclosed space. Which figure is most like the first three?

- A. the capital letter O
- B. the capital letter B
- C. the capital letter W
- D. the capital letter D

173. Three figures are shown. The first is two circles touching at exactly one point. The second is two squares touching corner to corner at exactly one point. The third is two triangles touching tip to tip at exactly one point. Which figure is most like the first three?

- A. two stars overlapping in the middle
- B. two stars far apart from each other

- C. two stars sharing a whole side
- D. two stars touching at one point

174. Three figures are shown. The first is a right triangle with its right angle at the top-left. The second is a right triangle with its right angle at the top-right. The third is a right triangle with its right angle at the bottom-right. Which figure is most like the first three?

- A. an equilateral triangle with three equal sides and angles
- B. a right triangle with the right angle at bottom-left
- C. a square with four equal sides and corners
- D. a circle with no corners or straight sides

175. Three figures are shown. The first is the capital letter B. The second is the capital letter D. The third is the capital letter E. Each looks the same when flipped upside down across a horizontal line through its middle. Which figure is most like the first three?

- A. the capital letter F
- B. the capital letter P
- C. the capital letter K
- D. the capital letter R

176. Three figures are shown. The first is a plus sign, made of two lines crossing in the middle. The second is the letter X, made of two lines crossing in the middle. The third is an asterisk, made of three lines crossing at one center point. Which figure is most like the first three?

- A. a star made of four lines crossing at the middle
- B. the capital letter T with lines meeting at the top
- C. the capital letter L with lines meeting at a corner
- D. the capital letter V with lines meeting at a point

Practice Exam 3: Answer Key and Explanations

- 1. B** — A bat is the tool a player swings in baseball, and a racket is the tool a player swings in tennis. Soccer is played with the feet, hockey uses a stick and puck, and swimming needs no tool for hitting anything. Only tennis matches the same tool-to-sport link shown by bat and baseball.
- 2. A** — Skates glide across a frozen surface of ice, and skis glide across a surface of snow. Sand and grass are too rough for skis to slide on, and water would make skis sink or need a different kind of board. The surface that skis are made for is snow, just as ice suits skates.
- 3. D** — A goal is the target where players aim the ball in soccer, and the basket is the target where players aim the ball in basketball. Tennis uses a net, golf uses a hole, and running has no target at all. Only basketball depends on a basket, so it matches the sport-and-target pair.
- 4. C** — A swimmer moves through a pool, and a skier moves down a slope, which is a snowy hill. A gym is an indoor room for exercise, a rink is made for skating, and a court is used for games like tennis. Slope is the only place that fits a skier, as the pool fits a swimmer.
- 5. D** — A helmet protects the head, and a knee pad protects the knee, so each piece of gear is named for the body part it guards. An elbow pad would guard the elbow, and nobody calls a knee pad a foot or shoulder guard. The knee is the exact body part the pad covers.
- 6. C** — Win and lose are opposites, and victory and defeat are opposites in the same way. A prize is something a victor might receive, which is a related idea and not an opposite. A game and a team are things around a contest and do not mean the reverse of victory. Defeat keeps the opposite pattern intact.
- 7. B** — Chess belongs to the group called board games, which names its kind. Soccer belongs to the group called sports. A team, a field and a ball are all parts or items connected to soccer, but none of them names what kind of activity soccer is. Only sport names the category, matching the first pair.
- 8. A** — A coach trains and guides a player, and a teacher trains and guides a student, so each pair joins a guide with the person guided. A school is a building, a desk is furniture, and a lesson is what gets taught. None of those is a person being guided, so student is the match.
- 9. B** — A marathon is a very long race, and a sprint is a very short race, so each word is paired with the length that describes it. Slow does not always fit, since sprinters run fast. Tired and late describe feelings or time, not the length of the race. Short is the opposite of long, matching the pattern.
- 10. A** — Dribbling is a move that belongs to basketball, and serving is the move that starts play in volleyball. Baseball players pitch, hockey players shoot a puck, and football players snap or throw the ball, so none of those sports starts play with a serve. Volleyball is the sport that matches the move-and-sport link.
- 11. D** — A puck is the object players hit in hockey, and a shuttlecock is the feathered object players hit in badminton. Tennis, golf and soccer all use round balls instead of a shuttlecock, so they do not fit. Only badminton uses a shuttlecock, just as only hockey uses a puck. The pairing links each sport with its special object.

12. C — Poker is played with cards, and chess is played with pieces such as pawns, knights and kings. Tennis and soccer use balls, and swimming needs no game pieces at all. Only chess depends on pieces, so it copies the way poker depends on cards. Each pair joins a game with the items the players handle during it.

13. D — A referee uses a whistle as a tool to control a game, and a carpenter uses a hammer as a tool to build things. A table is something a carpenter might make, a shop is a place, and a board is a material, so none of these is a tool in the same way. Hammer matches the person-and-tool pattern.

14. A — Medals follow a fixed order, so gold goes to first place, silver to second place, and bronze to third place. Second belongs to silver, which sits between them. Fourth place usually receives no medal, and last place is the final position, not the bronze spot. Bronze therefore matches third, just as gold matches first.

15. B — An athlete trains to improve, and a musician practices to improve, so each pair shows a person and the work done to get better. A concert is a performance, not the preparation, and a song and a band are things a musician plays or joins. Practice is the preparing activity that parallels training in the first pair.

16. C — The final whistle marks the end of a game, and the finish line marks the end of a race. A coach, a stadium and a crowd are all present at sports events, but none of them is something that the finish line ends. Only race fits, because the first pair names a signal and the contest it closes.

17. C — A medal is given to a winner as an honour for success, and a diploma is given to a graduate as an honour for finishing school. A school hands out the diploma but does not receive it, a teacher may give it, and an exam is only one step on the way. Graduate matches the winner in the first pair.

18. B — A teammate plays on your side and a rival plays against you, so the two words are opposites. A friend and an enemy are opposites in the same way. Partner is close to friend in meaning, which makes it a tempting but wrong choice. A player and a coach are roles in sport and are not the reverse of friend.

19. D — A gymnast needs balance as the key skill for beam and floor routines, and a sprinter needs speed as the key skill for short races. Race is the event, track is the place and shoes are equipment, so none of those is a skill the runner needs. Speed matches the skill-and-athlete pattern in the first pair.

20. A — Endurance, the ability to keep going, is the main quality needed for a marathon. Accuracy, the ability to hit a target exactly, is the main quality needed for archery. Running and swimming are mostly about stamina and speed, and wrestling relies on strength and technique. Only archery depends on aiming precisely, so it matches the quality-and-sport pattern.

21. D — After running hard for a long game, players need to replace lost fluid, so they would be thirsty and reach for water. Being bored, cold or proud would not explain why they drank water. The word because connects drinking to a need, and only thirsty creates that link. The other words describe feelings that do not cause drinking.

- 22. A** — A helmet is worn for protection, so it keeps the head safe if the rider falls. Tall, loud and slow do not describe what a helmet does for a head. A helmet cannot make anyone taller, make a sound, or change how fast someone pedals. Safe is the only word that explains the purpose of wearing it.
- 23. B** — Referees stop play by blowing a whistle, which makes a loud sharp sound everyone can hear. A pencil is for writing, a ticket lets a fan enter the stadium, and a jersey is a shirt that players wear. None of these can be blown to stop a game. The verb blew fits only with whistle in this sentence.
- 24. C** — Daily practice builds skill, so the team improved at passing and became better. Worse would mean the opposite of what practising causes. Smaller and colder do not describe skill and make no sense with the phrase at passing. The word so shows a result of practising, and only better is a result that fits.
- 25. B** — When a goalie stops a shot from going into the net, the move is called a save. Lunch is a meal, a seat is something to sit on, and a song is music, so none of those can keep a ball out of a net. Great save is a common phrase in sports, which makes it the only sensible fit.
- 26. A** — A score tied until the final second means neither team led by much, so the game was close. An easy game would be won by a large margin, which contradicts a tie. Quiet and messy describe noise and tidiness and say nothing about the score. Only close explains why the result stayed uncertain.
- 27. D** — Someone who must rest halfway has run out of energy, which is what exhausted means. Excited would make a swimmer want to keep going, while rich and loud say nothing about energy. The phrase too exhausted to swim explains why Leo stopped and rested, so exhausted is the only word that fits the clue.
- 28. C** — Rain turns a grass field into wet, slippery mud, so players would slip. Dusty and dry describe a field with no rain, which contradicts the clue. Bright describes light and does not cause slipping. The word because links the rain to the slipping, and muddy is the only word that connects them correctly.
- 29. B** — Chess is a game of planning, so players must think carefully before each move. Jumping, singing and waving do not help anyone choose a good move and would not be needed before touching a piece. The word carefully points to a mental action, and think is the only verb that suits careful planning at a chess board.
- 30. D** — Losing a game makes players feel disappointed, which is why the coach encourages them to try again. Delighted is the feeling of winning, so it contradicts the clue. Sleepy and curious do not naturally follow a loss. The word but shows a contrast between the sad feeling and the hopeful advice, and disappointed matches the sad side.
- 31. C** — Shaking hands before an important race are a sign of nervousness. A sleepy or bored runner would be calm or slow, not shaky, and a careless runner would not worry about a big race at all. The word so shows that the shaking is a result, and nervous is the only feeling that causes shaking before a start.
- 32. A** — The word although signals a contrast: the other team had size, but our players had something better. Winning by outsmarting an opponent takes cleverness. Clumsy and lazy players would not

outsmart anyone, and lonely does not describe skill. Only clever fits the idea of winning through smart thinking rather than size.

33. C — To conserve means to save for later use, so starting slowly saves strength for the last lap. Waste and lose mean the opposite of keeping strength, and borrow does not make sense because strength cannot be borrowed. The purpose clue for the final lap shows she wanted to keep energy, and only conserve fits.

34. A — Before a tournament begins, players must go over the rules so they understand them, and that is what review means. Ignore and break would cause trouble and would not be required, and hide makes no sense with rules everyone must know. The phrase had to shows a needed step, and review is the only sensible requirement.

35. B — Impartial means fair and not taking sides, which fits judges who score only on skill. Biased is the opposite, because a biased judge would favour a skater they liked. Jealous and cheerful describe feelings that say nothing about fairness. The clue not on which skater they liked defines impartial exactly, so it fits best.

36. D — Someone who can twist and bend into any direction is flexible. Stiff and rigid are opposites, since a stiff body resists bending. Tardy means late and has no link to bending. The phrase so that points to an ability that comes from a trait, and flexible is the only trait that causes that ability.

37. A — An underdog is a team that is not expected to win, so an underdog victory comes as a surprise. Predictable and ordinary mean the result was expected, which contradicts the clue. Boring describes how exciting something is and does not relate to expectations. Only surprising matches the idea that nobody saw it coming.

38. D — A recovery that takes months instead of weeks happens little by little, which is what gradual means. Sudden and speedy would mean quick improvement, and the sentence says the opposite. Careless describes how a person acts and does not describe a recovery process. Gradual is the only word that matches the long, slow healing.

39. C — Handling a steep wall easily is a result of preparing well, and training thoroughly means training completely and carefully. Rarely, lazily and carelessly all describe poor preparation, which would make the climb harder, not easier. The word because links training to the easy climb, so only thoroughly fits the cause.

40. B — The word but signals a contrast, so the first half was boring and the second half made fans cheer, meaning dull then exciting. Exciting then dull reverses the order and fans would not cheer for dull play. Dull and boring do not contrast, and calm and quiet would not make fans stand and cheer.

41. C — Soccer, hockey and tennis are all names of sports, and basketball is another sport. A helmet is equipment, a whistle is a tool used by a referee, and a stadium is a place where games are held. None of those three is a sport itself, so only basketball belongs in the group of games people play.

42. D — A bat, a racket and a stick are all handheld tools used to hit a ball or puck, and a paddle is used the same way in table tennis. A goal is a target, a field is a place and a medal is a prize, so none of them is something a player swings. Paddle matches the shared use.

43. B — First, second and third are ordinal numbers that show position in order, and fourth is the next ordinal number. Winner, prize and medal are related to a race but are not numbers showing order. Only fourth continues the list of position words, which is the shared feature of the three given words.

44. A — Chess, checkers and Monopoly are all board games played sitting at a table, and Scrabble is another board game. Tennis, swimming and karate are physical sports that need movement and space, not a game board. Only Scrabble shares the quiet, tabletop type of game, so it is the one that belongs with the group.

45. D — A referee, a coach and a goalie are all people who take part in a sport, and a captain is also a person with a job on a team. A ball, a jersey and a goal are objects, not people. The shared feature is that each word names a person in sports, so only captain belongs with the group.

46. A — Jersey, helmet and shin guards are all things a player wears, and cleats are shoes that players wear. A whistle is carried by a referee, a net hangs on a goal, and a scoreboard is fixed in the stadium. Only cleats are worn on the body by a player, which is the feature the three given items share.

47. C — Pitch, throw and toss all mean to send something through the air with your arm, and hurl means the same thing with more force. Catch is the reverse action of receiving an object, while drop and hold do not send it anywhere. Hurl is the only word that shares the sending meaning, so it belongs with the group.

48. B — A pool, a rink and a court are all places where sports are played, and a field is another. A trophy is a prize, a ball is equipment and a team is a group of players, so none of those is a place. The shared feature is a playing area, which only field provides, so it belongs with the three.

49. D — Marbles, dice and cards are all small objects used to play games, and a puzzle is another item used for play. A pencil is for writing, a spoon is for eating and a lamp gives light, so none of them is a game item. Puzzle shares the purpose of the group, entertainment and play, so it is the match.

50. B — Hockey, curling and skating are all winter sports played on ice or in cold weather, and skiing is a winter sport done on snow. Golf and cycling are usually warm-weather activities, and swimming is done in water. The shared feature is that all three need cold conditions, so only skiing belongs with them.

51. C — A quarterback, a striker and a pitcher are all positions that a player holds on a team, and a defender is a position in soccer. A stadium is a place, a helmet is equipment and a ticket gets a fan inside. Only defender names a role played by a person, so it fits the group of positions.

52. A — A marathon, a triathlon and a relay are all names of racing events, and a decathlon is a ten-part athletic event. A stadium is a place, a uniform is clothing and a coach is a person, so none of them names an event. Only decathlon is a competition, which is what the three given words share.

53. C — A scoreboard, a stopwatch and a timer all show or track numbers such as points or time during a game. A clock also shows time, so it belongs with them. A racket hits a ball, a helmet protects the head, and a towel dries skin, so none of those measures anything.

54. B — Rapid, speedy and swift all mean moving fast, and quick means the same thing. Slow means the opposite, so it is tempting only because it is related to speed. Heavy describes weight and gentle describes softness, and neither means fast. Only quick shares the meaning of the three given words.

55. A — Cheer, shout and yell all describe making a loud noise with the voice, and roar is also a very loud sound. Whisper and mumble are quiet, soft ways of speaking, which are the opposite. A sigh is a soft breath of air. Only roar shares the loud quality, so it belongs with the group.

56. D — A bat, a glove and a base are all part of baseball, and a mound is the raised spot where the pitcher stands. A goal belongs to soccer, a net belongs to tennis or volleyball, and a puck belongs to hockey. The shared feature is baseball, so mound is the only choice that belongs with the three.

57. B — A tournament, a league and a season are all ways that games are organized into a larger competition, and a playoff is also an organized set of games. A player, a ball and a uniform are people or objects, not forms of organized competition. Only playoff shares the idea of games grouped into a contest, so it fits the three.

58. A — Sturdy, strong and tough all describe something with great strength or the ability to last, and mighty also means very strong. Weak and fragile mean the opposite, since they break easily. Thin describes width, and a thin object can be strong or weak. Only mighty shares the meaning of strength.

59. C — Athletic, energetic and nimble all describe someone who moves well and has lots of energy, and agile means quick and graceful. Sluggish, clumsy and weary describe someone who is slow, awkward or tired, so they are the opposite of the group. Only agile shares the positive meaning, so it belongs with the three.

60. D — In each pair the second number is four times the first, because 2 times 4 is 8 and 3 times 4 is 12. Applying the same rule to 5 gives 5 times 4, which is 20. Choosing 25 would be multiplying by 5, and 15 or 10 come from adding small numbers that do not fit either given pair.

61. C — The second number is one third of the first, since 6 divided by 3 is 2 and 9 divided by 3 is 3. Dividing 12 by 3 gives 4. The number 8 comes from subtracting 4, which works for neither pair, 3 is the answer to 9 divided by 3, and 9 is the first number's half-way mistake.

62. A — Both pairs add five, since 3 plus 5 is 8 and 5 plus 5 is 10. So 9 plus 5 equals 14. The answer 19 adds 10, which breaks both pairs, 13 adds only 4, and 18 doubles 9, a rule that fits neither pair. Only adding five matches 3 : 8 and 5 : 10.

63. D — The rule is to subtract 4, since 10 minus 4 is 6 and 16 minus 4 is 12. Taking 4 from 25 gives 21. The number 29 adds 4 instead of subtracting, 22 subtracts only 3, and 19 subtracts 6, so none of those follows the pattern shown in both of the given pairs.

64. B — Each second number is five times the first, because 4 times 5 is 20 and 7 times 5 is 35. So 9 times 5 equals 45. The number 36 is 9 times 4, which copies the wrong multiplier, 14 only adds 5, and 54 multiplies by 6, so each tempting answer breaks the rule.

65. D — The second number is the first divided by 4, since 24 divided by 4 is 6 and 40 divided by 4 is 10. Dividing 60 by 4 gives 15. The number 56 subtracts 4, which does not work for the first pair, 20 divides by 3, and 12 divides by 5, so neither of those matches either given pair.

66. C — The rule adds 3 each time, because 2 plus 3 is 5 and 6 plus 3 is 9. Adding 3 to 11 gives 14. The number 8 subtracts 3, going the wrong way, 17 adds 6, and 13 adds only 2, so these answers do not follow the shared rule of adding 3 to the first number of a pair.

67. A — Each second number is the first multiplied by itself, since 5 times 5 is 25 and 3 times 3 is 9. So 7 times 7 equals 49. The number 14 doubles 7, 42 is 7 times 6, and 56 is 7 times 8, which are tempting facts for 7 but do not fit either given pair.

68. B — The second number is one third of the first, because 12 divided by 3 is 4 and 21 divided by 3 is 7. Dividing 30 by 3 gives 10. Subtracting 8, then 14, is not a consistent rule, so 27 and 15 do not fit. The answer 20 would be two thirds of 30, which neither pair shows.

69. C — Double the first number and add 3, because 2 times 2 plus 3 is 7 and 4 times 2 plus 3 is 11. For 8, doubling gives 16 and adding 3 makes 19. The number 16 forgets the extra 3, 20 adds 4 after doubling, and 13 adds only 5 to 8, which fits neither pair.

70. A — The rule subtracts 6, since 9 minus 6 is 3 and 15 minus 6 is 9. Taking 6 from 22 leaves 16. The number 28 adds 6 and goes the wrong way, 14 subtracts 8, and 7 divides 22 by 3, a rule that would turn 15 into 5 instead of 9, so it also fails.

71. D — Each second number is six times the first, because 4 times 6 is 24 and 6 times 6 is 36. So 8 times 6 equals 48. The number 14 only adds 6, which does not turn 4 into 24, 40 is 8 times 5, and 54 is 9 times 6, so each uses the wrong multiplier.

72. B — Each pair subtracts 7, because 18 minus 7 is 11 and 25 minus 7 is 18. Subtracting 7 from 40 leaves 33. The number 47 adds 7, which goes in the wrong direction, 30 subtracts 10, and 35 subtracts only 5, so those tempting answers use differences that do not match either given pair.

73. C — Multiply the first number by 4 and then add 1, since 2 times 4 plus 1 is 9 and 5 times 4 plus 1 is 21. For 7, 7 times 4 is 28 and adding 1 gives 29. The number 28 stops before adding 1, 35 multiplies by 5, and 11 only adds 4.

74. B — The second number is one fifth of the first, because 35 divided by 5 is 7 and 60 divided by 5 is 12. Dividing 85 by 5 gives 17. The number 80 subtracts 5, which does not turn 35 into 7, 15 is 85 divided by about 6, and 25 is a third of 75, so neither fits.

75. A — Each second number is ten times the first, since 3 times 10 is 30 and 8 times 10 is 80. So 6 times 10 equals 60. The number 9 only adds 3, 36 multiplies 6 by itself, and 66 adds 60, all of which break the pattern in 3 : 30 and 8 : 80.

76. D — The rule subtracts 9, because 12 minus 9 is 3 and 20 minus 9 is 11. Taking 9 from 31 gives 22. The number 40 adds 9, going up instead of down, 20 subtracts 11, and 24 subtracts 7, so each tempting answer uses a difference that fails for at least one pair.

77. B — Triple the first number and add 1, because 4 times 3 plus 1 is 13 and 6 times 3 plus 1 is 19. For 9, 9 times 3 is 27 and adding 1 makes 28. The number 27 forgets the extra 1, 30 adds 3 after tripling, and 18 only doubles, so none keeps the full rule.

78. D — Double the first number and then subtract 2, because 6 times 2 minus 2 is 10 and 10 times 2 minus 2 is 18. For 13, doubling gives 26 and subtracting 2 leaves 24. The number 26 forgets to subtract, 15 only adds 2, and 20 subtracts 6 after doubling.

79. C — Multiply the number by itself and add 1, because 3 times 3 plus 1 is 10 and 5 times 5 plus 1 is 26. For 7, 7 times 7 is 49 and adding 1 gives 50. The number 49 forgets the extra 1, 36 is 6 times 6, and 15 comes from adding 8, which fails for both pairs.

80. A — To find the missing number, subtract 8 from 25, which leaves 17. Checking, 8 plus 17 equals 25. The number 33 comes from adding 8 and 25 together, which is not what the equation asks. The numbers 16 and 18 are close guesses that give 24 and 26 when added to 8.

81. C — The missing number times 8 gives 56, so divide 56 by 8 to get 7. Checking, 7 times 8 equals 56. The number 8 only repeats the multiplier, 6 times 8 is 48, and 48 is also 56 minus 8, which is the wrong operation for finding a missing factor. Only 7 works.

82. A — The blank is the amount taken away, so subtract 19 from 52 to get 33. Checking, 52 minus 33 equals 19. The number 71 comes from adding 52 and 19, which uses the wrong operation. The numbers 34 and 32 are close but leave 18 and 20 when taken from 52.

83. D — Dividing 72 by the blank gives 9, so the blank is 72 divided by 9, which is 8. Checking, 72 divided by 8 equals 9. The number 81 is 72 plus 9, which uses the wrong operation, and 63 is 72 minus 9. The number 7 would give a result a little over 10.

84. B — The blank is the starting amount before 17 was taken away, so add 17 to 34 to get 51. Checking, 51 minus 17 equals 34. The number 17 simply repeats a given number, 52 is one too many and gives 35, and 41 comes from adding 7 and 34 by mistake instead of adding 17.

85. D — Dividing 54 by 6 shows the missing factor is 9. Checking, 6 times 9 equals 54. The number 8 gives 48 and the number 10 gives 60, both of which are near misses from counting by sixes. The number 48 is 54 minus 6, which uses subtraction when the equation needs division.

86. C — Only multiplication works, because 8 times 5 equals 40. Adding gives 13, subtracting gives 3, and dividing 8 by 5 gives a number only a little over 1. Each of those results is far from 40. Since 40 is the product of 8 and 5, the sign must be times.

87. A — First work out the right side, since 18 plus 12 is 30. Then ask what times 5 equals 30, which is 6. The number 30 is the sum itself and forgets to divide by 5, 7 would give 35, and 5 would give 25, so only 6 makes both sides equal.

88. B — Undo the steps in reverse. First subtract 4 from 25 to get 21, then divide by 3 to get 7. Checking, 3 times 7 is 21 and adding 4 makes 25. The number 21 stops after the first step, 9 divides 25 by 3 with a rounding mistake, and 8 gives 28.

89. B — Undo the steps in reverse. Add 6 to 22 to get 28, then divide by 4 to get 7. Checking, 7 times 4 is 28 and minus 6 leaves 22. The number 28 stops after the first step, 4 comes from subtracting instead of adding, and 5 gives only 14.

90. C — Taking 9 away from 15 leaves 6, so the sign is minus. Adding gives 24, multiplying gives 135, and dividing gives a number a little over 1. None of these is close to 6. Only subtraction turns 15 and 9 into 6, which makes the equation true, so minus is the one sign that works.

91. A — The same number multiplied by itself makes 81, and 9 times 9 is 81. The number 18 is double 9 and would give 324 when squared, 8 gives 64, and 27 is a third of 81, which is the product and not the factor. Only 9 times 9 equals 81, so each blank holds 9.

92. D — First take 8 from 20 to leave 12, which is the value of two stars together. Each star is half of that, which is 6. The number 12 stops one step early, 14 comes from adding 8 and 6 incorrectly, and 10 would make two stars plus 8 equal 28.

93. A — Undo the steps in reverse. Subtract 5 from 12 to get 7, then multiply by 3 to get 21. Checking, 21 divided by 3 is 7 and plus 5 makes 12. The number 7 stops after the first step, 36 multiplies 12 by 3 and ignores the 5, and 15 is 12 plus 3.

94. C — First work out the right side, since 4 times 5 equals 20. Then 100 divided by the blank must equal 20, so the blank is 5. The number 20 is just the right side, 4 would give 25, and 25 would give 4, so only 5 balances the whole equation.

95. D — Take the two known numbers from 90 in steps. The total taken away is 90 minus 20, which is 70, and 70 minus 35 leaves 35. Checking, 90 minus 35 is 55 and 55 minus 35 is 20. The number 55 stops after one step, and 45 and 25 give 10 and 30.

96. B — Work backward from the brackets. Divide 24 by 4 to get 6, then add 3 to find the blank, which is 9. Checking, 9 minus 3 is 6 and 6 times 4 is 24. The number 6 stops before adding 3, 27 adds 3 to 24, and 12 gives 36.

97. A — Splitting 28 into equal groups of 4 gives 7, so the sign is divided by. Adding gives 32, subtracting gives 24, and multiplying gives 112, and none of those equals 7. Only division turns 28 and 4 into 7, since 7 times 4 is 28, and that check confirms the answer clearly.

98. D — Four equal squares add to 36, so one square is 36 divided by 4, which is 9. The question asks for the square minus 2, so 9 minus 2 is 7. The number 9 forgets the last step, 34 subtracts 2 from the total, and 12 subtracts 2 incorrectly from 14.

99. C — Each number is 9 more than the one before it, since 18 minus 9 is 9 and 27 minus 18 is 9. Adding 9 to 36 gives 45. The number 54 skips a step by adding 18, 43 adds 7, and 47 adds 11, so only 45 continues the steady jumps of 9.

100. B — Each number is 5 less than the one before, because 75 minus 5 is 70 and 70 minus 5 is 65. Taking 5 from 60 gives 55. The number 50 skips a step, 52 takes away 8, and 57 takes away only 3, so only 55 continues the steady drop of 5.

101. A — The numbers rise by 2 each time, as in 5 to 7, 7 to 9 and 9 to 11. Adding 2 to 11 gives 13. The number 12 adds only 1, 14 adds 3, and 15 adds 4, so each of these breaks the pattern of equal steps of 2 shown by the earlier numbers.

102. B — Each number goes up by 11, because 22 minus 11 is 11 and 33 minus 22 is 11. Adding 11 to 44 gives 55. The number 54 adds 10, 66 jumps by 22 and skips 55, and 45 adds only 1, so only 55 keeps the steady steps of 11.

103. C — Each number is three times the one before it, since 3 times 3 is 9 and 9 times 3 is 27. Multiplying 81 by 3 gives 243. The number 162 doubles 81, 324 multiplies by 4, and 108 adds 27, so each breaks the multiply-by-3 pattern running through the series.

104. D — Each number is half the one before it, because 96 divided by 2 is 48 and 48 divided by 2 is 24. Halving 12 gives 6. The number 3 halves twice and skips a term, 8 subtracts 4, and 4 divides by 3, so only 6 continues the divide-by-2 pattern.

105. B — Each number is double the one before it, since 4 times 2 is 8 and 16 times 2 is 32. Doubling 32 gives 64. The number 48 adds 16 and 36 adds only 4, which do not match the pattern, while 128 doubles twice and skips the next term, so only 64 fits.

106. C — Each number is one third of the one before, because 729 divided by 3 is 243 and 243 divided by 3 is 81. Dividing 27 by 3 gives 9. The number 3 divides by 9, skipping a term, 18 subtracts 9, and 6 divides by 4.5, so only 9 fits the pattern.

107. D — The gaps are 3, 4, 5 and 6, growing by one each time, so the next gap is 7. Adding 7 to 20 gives 27. The number 26 adds only 6, 28 adds 8, and 25 adds 5, so each uses the wrong gap and misses the growing pattern shown by the earlier numbers.

108. A — The gaps are 1, 2, 3 and 4, growing by one each time, so the next gap is 5. Adding 5 to 12 gives 17. The number 16 adds only 4, 18 adds 6, and 20 adds 8, so each uses the wrong gap and misses the growing pattern shown by the earlier numbers.

109. A — The gaps go down by 2, 4 and 6, growing by 2 each time, so the next gap is 8. Taking 8 from 88 gives 80. The number 82 uses a gap of 6, 84 uses a gap of 4, and 78 uses a gap of 10, so only 80 follows the growing gaps.

110. D — The gaps are 2, 4, 6 and 8, so each gap is 2 more than the last and the next gap is 10. Adding 10 to 22 gives 32. The number 30 adds 8, 28 adds 6, and 34 adds 12, so each uses a gap from the wrong place in the pattern.

111. B — The series alternates between adding 1 and adding 2, as in 3 to 4, 4 to 6, 6 to 7 and 9 to 10. The last step was plus 1, so the next is plus 2, which gives 12. The number 11 adds 1 again, 13 adds 3, and 14 adds 4.

112. C — The pattern alternates between adding 2 and subtracting 3, as in 9 to 11, 11 to 8, 8 to 10 and 10 to 7. The last step was plus 2, so now subtract 3 from 9 to get 6. The number 11 adds 2 again, 8 subtracts 1, and 7 subtracts 2.

113. C — The series alternates between subtracting 3 and adding 4, as in 20 to 17, 17 to 21, 21 to 18 and 18 to 22. The last step was plus 4, so the next is minus 3, giving 19. The number 23 adds 1, 26 adds 4 again, and 18 subtracts 4.

114. D — Two series are mixed together. Every other number counts 1, 2, 3, so the next is 4, and the others count 5, 10, 15 by fives. The next place belongs to the first series, so the answer is 4. The number 20 belongs to the second series, 5 repeats a number, and 6 skips ahead.

115. A — The pattern repeats two steps, doubling and then subtracting 2, as in 7 to 14, 14 to 12, 12 to 24 and 24 to 22. After 22 doubles to 44, the next step subtracts 2, giving 42. The number 88 doubles again, 46 adds 2, and 40 subtracts 4, so none follows.

116. B — The pattern repeats two steps, multiplying by 3 and then adding 1, as in 2 to 6, 6 to 7, 7 to 21 and 21 to 22. After 22 triples to 66, the next step adds 1, giving 67. The number 198 triples again, 68 adds 2, and 88 adds 22.

117. B — Each number is double the one before it, plus 1, since 2 times 2 plus 1 is 5 and 5 times 2 plus 1 is 11. For 47, doubling gives 94 and adding 1 makes 95. The number 94 forgets to add 1, 96 adds 2, and 93 takes 1 away, so the rule is missed.

118. D — The gaps double each time, going 3, 6, 12 and 24, so the next gap is 48. Adding 48 to 49 gives 97. The number 98 doubles 49 with no change, 96 uses a gap of 47, and 73 adds only 24, repeating the last gap instead of doubling it.

119. A — Across the top row the square stays black and the same shape but grows from small to large. The bottom row must grow the same way while keeping its white colour and triangle shape, giving a large white triangle. The small white triangle never grows, the large black triangle changes colour, and the large white square changes shape.

120. C — The top row adds two shapes from left to right while the shape and colour stay the same. The bottom row starts with two white circles, so two more gives four white circles. Three white circles adds only one, four black circles changes the colour, and four white stars changes the shape, so each fails to copy the top-row rule.

121. B — The top row removes the dot while the shape and colour stay the same. The bottom row should do the same, leaving a white triangle with no dot. The triangle with a black dot never removes the dot, the black triangle changes colour, and the white square changes shape, so only the first matches.

122. C — In the top row the arrow turns around to point at the opposite corner, from top-right to bottom-left. The bottom row must do the same, so top-left becomes bottom-right. An arrow still pointing to the top-left makes no change, and the other two corners are neighbours of the top-left, not its opposite.

123. D — The top row moves the dot to the opposite side of the box, from top to bottom. The bottom row starts with the dot at the left, so the opposite side is the right. Staying at the left makes no move, the top is a different side, and the middle is not a side at all.

124. A — The top row has one fewer shape on the right, going from three to two, while the size and colour stay the same. The bottom row goes from four triangles to three black triangles. Five triangles adds one, three white triangles changes the colour, and two triangles removes two, so only three small black triangles follows the rule.

125. A — The top row adds one shape and switches the colour from black to white. The bottom row must do both, turning two black squares into three white squares. Three black squares adds a shape but misses the colour change, two white squares changes colour only, and three white circles changes the shape, which the top row does not do.

126. B — Each row adds one line at every step, going from none to one to two. Row 2 has none and then one, so the next figure has two lines and stays a white square. Three lines jumps too far, a white circle changes the shape, and no lines goes back to the start.

127. C — In Row 1 the arrow turns a quarter turn clockwise at each step, from up to right to down. Row 2 begins at left and turns to up, so the next quarter turn clockwise points right. An arrow pointing left repeats the start, down would be a half turn, and up repeats the middle.

128. D — Row 1 has shapes with three, four and five sides, adding one side each time. Row 2 starts at four and five sides, so the next shape has six sides, which is a hexagon. A triangle or square goes back to earlier numbers, and an octagon has eight sides, which skips the six-sided shape.

129. A — Both the count and the colour change in the same order along each row: one white, two black, three striped. Row 2 uses stars, so the third figure is three striped stars. Three black stars keeps the second colour, three striped dots changes the shape back to dots, and two striped stars has the wrong count for the third column.

130. B — The dot moves clockwise around the corners in Row 1, from top-left to top-right to bottom-right. Row 2 follows the same path, so after top-right the dot lands in the bottom-right corner. The bottom-left corner skips ahead, the top-left corner goes back to the start, and the center is not a corner.

131. D — In the top row the arrow flips to face the other way, while its colour and the dot's position and colour stay the same. The bottom row flips the black arrow to point left and keeps the white dot below. Repeating the first figure changes nothing, moving the dot above changes its place, and a white arrow changes the colour.

132. C — The top row swaps the outer and inner shapes and also swaps their colours. Applying both swaps to the triangle and star gives a large black star with a small white triangle inside. The first wrong choice swaps colours but not shapes, the second swaps shapes but not colours, and the last makes both shapes black.

133. B — Row 1 follows the order white, black, striped. Row 2 uses the same repeating order but starts one step later, with striped, then white, so black comes next. A white square or a striped square repeats a colour that is already in the row, and a black circle uses the right colour but changes the shape.

134. C — Each row and column contains the star, the heart and the moon exactly once. Row 3 already has the moon and the star, so the heart is missing. A moon or a star would repeat a shape already in the row and column, and a sun is a new shape that never appears in the pattern.

135. A — Each row and column contains small, medium and large exactly once. Row 3 already has large and small, so the missing figure must be medium. A small circle or a large circle would repeat a size already in the row, and a medium square has the right size but changes the shape to something that never appears.

136. D — Each figure has one more square than the figure to its left and one more than the figure above it. Row 3 goes three, four, so the next count is five. Four repeats the middle figure, six skips past five, and five white circles has the right count but changes the shape, which never changes in this grid.

137. B — In each row the third figure takes its shape from the first figure and its colour from the second. Row 3 has a striped square first and a white circle second, so the answer is a white square. The striped circle reverses the rule, the white circle copies the second figure, and the black square has no source.

138. D — Every row adds one shape and grows one size at each step, from one small to two medium to three large, while colour and shape stay fixed within a row. Row 3 is striped triangles, so the third figure is three large striped triangles. Medium keeps the size, white changes colour, and two shapes is too few.

139. C — Folding in half once stacks the sheet into two layers. A hole punched through the folded shape goes through both layers, so unfolding shows two holes, one on each side of the crease. One hole would mean only a single layer was punched. Three and four holes would need more layers than a single fold can make.

140. A — The fold line runs across the middle of the sheet, and a hole near the fold is mirrored across it. Unfolding gives two holes in a vertical line, one just above and one just below the center. A hole in the exact center would sit on the fold, and holes near the outer edges need a punch far from it.

141. B — Two folds make four layers, because each fold doubles the thickness: one layer becomes two, then four. A punch through every layer therefore leaves four holes when the sheet is opened. Two holes would come from only one fold, one hole from no fold, and eight holes would need three folds, which this sheet does not have.

142. D — A letter fold makes three equal layers, and one punch passes through each of them. When the sheet is opened there are three holes, one in each third of the paper. Two holes would come from a simple half fold, one hole would mean the punch missed layers, and six holes would double the count with no reason.

143. A — One fold makes two layers, so every punched hole goes through two layers of paper. Three punches then make three times two, which is six holes in the opened sheet. Three holes would count

only one layer, five holes does not match any layer count, and nine holes would multiply by three layers instead of two.

144. C — The fold is a horizontal line across the middle, so the top-right hole is mirrored below it. Unfolding gives a hole near the top-right corner and a matching hole near the bottom-right corner, both near the right edge. Holes near the left edge, holes along the top, or a single hole would not match a mirror across the middle fold.

145. B — The hole on the crease is cut through the fold itself, so it opens into one hole. Each of the other two holes passes through two layers, so each becomes a pair, making four more. One plus four equals five holes. Three counts each punch once, four ignores the crease hole, and six doubles the crease hole by mistake.

146. C — The fold line is the diagonal from the top-right to the bottom-left corner. The top-left corner lies on top of the bottom-right corner, so one punch makes a hole in each of those two corners. Holes near the other two corners, a single hole, or four holes do not match a single fold.

147. A — Each fold doubles the layers, so three folds make eight layers. Every punched hole goes through all eight layers, so three punches make three times eight, which is twenty-four holes. Twelve would come from four layers, nine would count only three layers, and sixteen would come from only two punches through eight layers.

148. D — Two folds mirror the hole across the horizontal and vertical middle lines, giving four holes. The punch was near the top edge and halfway across, so the holes sit near the top and bottom edges at the quarter marks across the sheet. Holes at the left and right edges or down the center need a different punch spot.

149. D — The bottom edge of the small folded square is the first crease, which runs across the middle of the sheet. A hole close to it is mirrored above and below that line, and the second fold mirrors it left and right too. The result is four holes, two just above and two just below the middle line.

150. C — The left side of the small square is the vertical crease, which runs down the middle of the sheet. A hole near it is mirrored across that line, forming a close pair, and the first fold mirrors the pair to the bottom. That makes a close pair at the top center and another at the bottom center.

151. B — The crease is down the middle, so the hole near it, high up, becomes a close pair at the top center. The hole low and near the open edge is mirrored toward the far left and far right edges, making a far-apart pair low on the sheet. The other choices swap the heights or pair the wrong distances.

152. A — Two folds in the same direction make four stacked layers of equal height. A hole in the middle of the strip lands in the middle of each of those four layers, so the sheet shows four holes in a vertical line, evenly spaced. A horizontal row or a square pattern would need folds in other directions.

153. D — Two folds make four layers, because the thickness doubles with each fold. Each of the four punches goes through all four layers, so the opened sheet has four times four, or sixteen holes. Eight would come from only two punches or three layers, twelve would use three punches, and four would count each punch once.

154. C — The first fold makes two layers, and folding those in thirds triples the thickness to six layers. One punch goes through all six, so the opened sheet has six holes. Three holes would come from the letter fold alone, five does not match any layer count, and nine would multiply three by three.

155. A — The last fold lies in the middle of the right half, and the first fold is the center of the sheet. A hole near the last crease forms a close pair around the middle of the right half, and mirroring across the center makes another pair in the left half. Evenly spaced holes would need a punch in the middle.

156. B — Two folds make four layers, and each of the two punches goes through every layer. Two punches times four layers makes eight holes in the opened sheet. Four holes would count only one punch, six does not match a layer count, and two holes would count each punch only once.

157. D — The longest edge of the small triangle is a side of the original sheet. Two diagonal folds produce four layers and spin the hole around to all four sides, so each side of the sheet gets a hole near its middle. Corner holes would need a punch at a corner, and two holes would need fewer layers.

158. B — The three given figures are all shapes with exactly four straight sides. A parallelogram also has four straight sides, so it belongs. A triangle has three sides, a pentagon has five sides, and a circle has no straight sides at all. Only the parallelogram matches the shared feature of having four sides.

159. A — The shapes and colours all differ, so those are not the shared feature. What the three figures have in common is their size, because each one is small. A small black star keeps that size. The large, medium and very large stars are bigger, so only the small star matches the group.

160. C — Every figure in the group contains exactly two shapes, while the shape type and colour change. Two white stars also has two shapes. One star has too few, three stars has one too many, and four stars has double the count, so only the picture with two stars matches the shared feature.

161. A — The outer shape and colour change from figure to figure, but each one holds exactly three dots. Only the star with three dots inside matches that count. The stars with two, four or one dots are the same kind of figure but hold the wrong number of dots, so they do not match the shared feature.

162. D — The shapes change, but every figure is filled with the same dotted pattern. A star filled with tiny dots keeps that pattern. A striped star uses lines instead of dots, a solid black star has no pattern at all, and a plain white star has no filling, so none of those matches the shared feature.

163. C — Each figure has three shapes lined up one above another in a column. Three stars stacked in a column copies that layout. A horizontal row has the right count but the wrong direction, two stars in a column has the wrong count, and a diagonal line is slanted rather than straight up and down.

164. B — Each figure shows three shapes in a row with the colours alternating black, white, black. The star group with black, white, black copies that colour order. Starting with white reverses the pattern, and the groups with two black stars or two white stars side by side break the alternation, so only the first matches.

165. D — The shape changes each time, but every outline is a curvy, wavy line instead of a straight one. A star with a wavy edge matches that feature. A smooth edge has no waves, a zigzag edge has sharp points instead of curves, and a dotted edge is made of tiny separate dots, not a wavy line.

166. A — The outer shapes differ, but each contains a dot placed right in the middle. A pentagon with a dot in the exact center copies this. A dot near the top, in a corner or on the edge sits away from the middle, so those pentagons do not match the group.

167. B — The shapes change, but each figure has exactly one quarter of its area shaded black. A hexagon with a quarter shaded matches that amount. One half is twice as much, three quarters is three times as much, and nothing shaded has no black at all, so only one quarter fits.

168. C — The shapes differ, but each one is in the top-left corner of its box. A heart in that corner copies the position. A heart in the bottom-left corner is under it, a heart in the center is in the middle, and a heart in the top-right corner is across from it.

169. B — Each figure shows three shapes that grow from left to right. Three hearts getting larger copies that growth. Hearts getting smaller reverse the order, hearts that stay the same size do not grow, and a large, small, large pattern grows and then shrinks, so only the growing hearts match the first three.

170. A — All three given figures point to the left, even though their shapes are different. A chevron pointing left shares that direction. A chevron pointing right is the exact opposite, and chevrons pointing up or down turn a quarter turn away, so those three do not match the direction shared by the group.

171. D — E, F and H are drawn with only straight lines and have no curves. The letter L is also made of two straight lines. The letters S, O and C all have curved parts, so they do not share the feature. Only L is built entirely from straight lines, so it belongs with the first three.

172. C — C, U and V are open shapes, because you can trace around them without ever closing a space. The letter W is also open. The letters O, B and D each enclose at least one space, so they have the opposite feature. Only W matches the open feature of the three given letters.

173. D — Each given figure has two shapes that meet at exactly one point. Two stars touching tip to tip share that single point. Overlapping stars share a whole area, stars far apart do not touch at all, and stars sharing a whole side meet along a line instead of a point, so only the first matches.

174. B — Each given figure is a right triangle, which has one square corner, only turned to a different position. A right triangle with its right angle at the bottom-left is the same kind of figure. An equilateral triangle has no square corner, a square has four, and a circle has none.

175. C — B, D and E look the same after a top-to-bottom flip, because their top halves mirror their bottom halves. The letter K also matches its upside-down mirror image. The letters F, P and R have different top and bottom halves, so flipping them gives a changed picture. Only K shares this top-to-bottom symmetry.

176. A — The plus sign, the X and the asterisk all have lines that cross each other at one center point. A star made of four crossing lines shares this feature. The letters T, L and V have lines that only meet at an end, not through the middle, so they do not match the crossing feature.