

PRACTICE EXAM 9: 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. Drum is to beat as bell is to ____.

- A. ring
- B. read
- C. jump
- D. spill

2. Guitar is to instrument as sculpture is to ____.

- A. season
- B. vegetable
- C. country
- D. artwork

3. Loud is to soft as high is to ____.

- A. tall
- B. low
- C. top
- D. sing

4. Pen is to write as brush is to ____.

- A. sing
- B. dig
- C. paint
- D. cut

5. Painter is to brush as drummer is to ____.

- A. scissors
- B. drumstick
- C. ladder
- D. spoon

6. Song is to singer as painting is to ____.

- A. painter
- B. museum
- C. frame
- D. paint

7. Clay is to pot as yarn is to ____.

- A. bowl
- B. paint
- C. sweater
- D. song

8. Conductor is to orchestra as teacher is to ____.

- A. pencil
- B. homework
- C. recess
- D. class

9. Mural is to paint as quilt is to ____.

- A. bake
- B. carve
- C. sew
- D. polish

10. Note is to melody as word is to ____.

- A. sentence
- B. letter
- C. ink
- D. page

11. Actor is to stage as swimmer is to ____.

- A. towel
- B. pool
- C. medal
- D. race

12. Tuba is to low as piccolo is to ____.

- A. heavy

- B. slow
- C. wide
- D. high

13. Gallery is to paintings as library is to ____.

- A. songs
- B. tickets
- C. books
- D. costumes

14. Whisper is to shout as hum is to ____.

- A. sing
- B. sleep
- C. draw
- D. walk

15. Easel is to painting as music stand is to ____.

- A. audience
- B. trumpet
- C. ticket
- D. sheet music

16. Chisel is to sculptor as needle is to ____.

- A. farmer
- B. tailor
- C. pilot
- D. baker

17. Pottery is to kiln as bread is to ____.

- A. sink
- B. oven
- C. plate
- D. shelf

18. Overture is to start as finale is to ____.

- A. echo
- B. solo
- C. chorus
- D. end

19. Harp is to plucking as drum is to ____.

- A. striking
- B. blowing
- C. bowing
- D. folding

20. Choir is to singers as band is to ____.

- A. stages
- B. notes
- C. musicians
- D. tickets

21. After the song ended, the whole audience began to ____.

- A. clap
- B. melt
- C. sink
- D. pour

22. Mia used a red crayon to _____ a picture of an apple.

- A. hear
- B. smell
- C. draw
- D. taste

23. The singer drank warm tea to soothe her sore _____.

- A. elbow
- B. throat
- C. knee
- D. ankle

24. The artist mixed blue and yellow paint to make _____.

- A. purple
- B. orange
- C. pink
- D. green

25. The band marched down the street, playing a _____ tune.

- A. cheerful

- B. wooden
- C. narrow
- D. damp

26. The potter shaped the wet clay into a smooth _____.

- A. sunrise
- B. whisper
- C. mile
- D. bowl

27. Dancers wore bright _____ so the audience could see them from far away.

- A. homework
- B. costumes
- C. breezes
- D. lessons

28. The drum solo was so _____ that people near the front covered their ears.

- A. silent
- B. gentle
- C. loud
- D. distant

29. The mural was a _____ job, so ten students worked on it together.

- A. tiny
- B. lazy
- C. quiet
- D. huge

30. Ana was nervous, but when she began to sing her fear started to ____.

- A. fade
- B. grow
- C. spread
- D. rise

31. The sculptor worked ____, chipping away one tiny piece of stone at a time.

- A. rudely
- B. patiently
- C. suddenly
- D. hungrily

32. Although the violin was old, its sound was still ____.

- A. dusty
- B. crooked
- C. sweet
- D. torn

33. The teacher asked the class to ____ the rhythm by tapping their desks, then repeat it exactly.

- A. bury
- B. sell
- C. copy
- D. lose

34. The play was so ____ that even the shyest child in the crowd laughed out loud.

- A. sad
- B. funny
- C. boring
- D. scary

35. Because the room was full of sleeping babies, the choir sang in a ____ voice.

- A. gentle
- B. booming
- C. frantic
- D. rusty

36. The conductor raised her baton, and the room became ____ as the musicians waited to begin.

- A. stormy
- B. sticky
- C. bumpy
- D. silent

37. The gallery's newest painting is so ____ that visitors cannot tell it from a photograph.

- A. blurry
- B. crooked
- C. tiny
- D. realistic

38. Ravi felt so ____ with his finished sculpture that he showed it to everyone he met.

- A. ashamed

- B. worried
- C. proud
- D. sleepy

39. The ____ rehearsed all week so that the ____ would run smoothly on opening night.

- A. dancers, performance
- B. performance, dancers
- C. tickets, seats
- D. lights, rehearsed

40. Because the melody was so ____, the children could hum it after hearing it only once.

- A. complicated
- B. catchy
- C. forgettable
- D. ancient

41. Which word belongs with: drum, flute, harp?

- A. brush
- B. guitar
- C. canvas
- D. clay

42. Which word belongs with: red, blue, yellow?

- A. circle
- B. loud
- C. green
- D. tall

43. Which word belongs with: pencil, marker, crayon?

- A. chalk
- B. paper
- C. eraser
- D. frame

44. Which word belongs with: painter, sculptor, potter?

- A. museum
- B. canvas
- C. clay
- D. illustrator

45. Which word belongs with: sing, hum, whistle?

- A. paint
- B. chant
- C. jump
- D. sleep

46. Which word belongs with: loud, soft, quiet?

- A. heavy
- B. rough
- C. warm
- D. silent

47. Which word belongs with: stage, curtain, spotlight?

- A. costume
- B. lunchbox
- C. ladder
- D. blanket

48. Which word belongs with: triangle, tambourine, cymbal?

- A. cello
- B. flute
- C. drum
- D. horn

49. Which word belongs with: ballet, tap, waltz?

- A. opera
- B. poster
- C. tango
- D. quilt

50. Which word belongs with: clay, marble, wood?

- A. bronze
- B. ink
- C. canvas
- D. crayon

51. Which word belongs with: composer, conductor, pianist?

- A. sculptor

- B. author
- C. actor
- D. violinist

52. Which word belongs with: lullaby, anthem, march?

- A. portrait
- B. ballad
- C. mural
- D. statue

53. Which word belongs with: portrait, landscape, still life?

- A. seascape
- B. statue
- C. melody
- D. poem

54. Which word belongs with: strings, brass, woodwind?

- A. chorus
- B. tempo
- C. percussion
- D. volume

55. Which word belongs with: whole note, half note, quarter note?

- A. high note
- B. eighth note
- C. sour note
- D. final note

56. Which word belongs with: rhythm, melody, harmony?

- A. sculpt
- B. pigment
- C. easel
- D. tempo

57. Which word belongs with: line, shape, color?

- A. lyric
- B. chorus
- C. scale
- D. texture

58. Which word belongs with: opera, musical, ballet?

- A. puppet show
- B. painting
- C. statue
- D. mural

59. Which word belongs with: collage, mosaic, mural?

- A. symphony
- B. sonata
- C. poster
- D. chorus

60. Two number pairs follow the same rule: $7 : 19$ and $10 : 22$. Which number goes with 13 ($13 : ?$) in the same way?

- A. 24
- B. 25
- C. 26
- D. 35

61. Two number pairs follow the same rule: $48 : 41$ and $35 : 28$. Which number goes with 52 ($52 : ?$) in the same way?

- A. 45
- B. 44
- C. 46
- D. 59

62. Two number pairs follow the same rule: $23 : 18$ and $31 : 26$. Which number goes with 40 ($40 : ?$) in the same way?

- A. 34
- B. 36
- C. 35
- D. 45

63. Two number pairs follow the same rule: $6 : 42$ and $9 : 63$. Which number goes with 4 ($4 : ?$) in the same way?

- A. 24
- B. 32
- C. 11
- D. 28

64. Two number pairs follow the same rule: $17 : 51$ and $12 : 36$. Which number goes with 25 ($25 : ?$) in the same way?

- A. 50
- B. 75
- C. 28
- D. 72

65. Two number pairs follow the same rule: $72 : 9$ and $56 : 7$. Which number goes with 40 ($40 : ?$) in the same way?

- A. 5
- B. 4
- C. 6
- D. 32

66. Two number pairs follow the same rule: $18 : 6$ and $27 : 9$. Which number goes with 45 ($45 : ?$) in the same way?

- A. 14
- B. 16
- C. 48
- D. 15

67. Two number pairs follow the same rule: $86 : 43$ and $52 : 26$. Which number goes with 38 ($38 : ?$) in the same way?

- A. 18
- B. 20
- C. 19
- D. 76

68. Two number pairs follow the same rule: $15 : 30$ and $22 : 44$. Which number goes with 19 ($19 : ?$) in the same way?

- A. 34
- B. 38
- C. 36
- D. 57

69. Two number pairs follow the same rule: $100 : 75$ and $60 : 35$. Which number goes with 44 ($44 : ?$) in the same way?

- A. 20
- B. 19
- C. 18
- D. 69

70. Two number pairs follow the same rule: $4 : 16$ and $6 : 36$. Which number goes with 8 ($8 : ?$) in the same way?

- A. 16
- B. 32
- C. 64
- D. 56

71. Two number pairs follow the same rule: $64 : 8$ and $81 : 9$. Which number goes with 49 ($49 : ?$) in the same way?

- A. 6
- B. 8
- C. 42
- D. 7

72. Two number pairs follow the same rule: $5 : 16$ and $8 : 25$. Which number goes with 11 ($11 : ?$) in the same way?

- A. 34
- B. 33
- C. 35
- D. 22

73. Two number pairs follow the same rule: $2 : 11$ and $4 : 23$. Which number goes with 5 ($5 : ?$) in the same way?

- A. 30
- B. 29
- C. 28
- D. 11

74. Two number pairs follow the same rule: $5 : 17$ and $9 : 33$. Which number goes with 12 ($12 : ?$) in the same way?

- A. 48
- B. 42
- C. 16
- D. 45

75. Two number pairs follow the same rule: $9 : 5$ and $15 : 8$. Which number goes with 21 ($21 : ?$) in the same way?

- A. 10
- B. 22
- C. 11
- D. 12

76. Two number pairs follow the same rule: $30 : 14$ and $24 : 11$. Which number goes with 18 ($18 : ?$) in the same way?

- A. 8
- B. 9
- C. 7
- D. 17

77. Two number pairs follow the same rule: $4 : 50$ and $7 : 80$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 100
- B. 90
- C. 99
- D. 19

78. Two number pairs follow the same rule: $4 : 20$ and $7 : 26$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 30
- B. 36
- C. 16
- D. 32

79. Two number pairs follow the same rule: $3 : 14$ and $6 : 20$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 24
- B. 28
- C. 26
- D. 14

80. Solve: $17 + ? = 52$. What number goes in the blank?

- A. 69
- B. 34
- C. 35
- D. 36

81. Solve: $? - 19 = 44$. What number goes in the blank?

- A. 25
- B. 63
- C. 62
- D. 64

82. Solve: $100 - ? = 37$. What number goes in the blank?

- A. 137
- B. 62
- C. 63
- D. 73

83. Solve: $7 \times ? = 56$. What number goes in the blank?

- A. 8
- B. 49
- C. 63
- D. 9

84. Solve: $? \div 6 = 13$. What number goes in the blank?

- A. 19
- B. 72
- C. 84
- D. 78

85. Solve: $? \times 7 = 91$. What number goes in the blank?

- A. 84
- B. 98
- C. 13
- D. 12

86. Solve: $156 - ? = 89$. What number goes in the blank?

- A. 245
- B. 66
- C. 77
- D. 67

87. Solve: $? + ? = 46$. Both blanks hold the same number. What is it?

- A. 22
- B. 23
- C. 24
- D. 92

88. Solve: $? + ? + ? = 51$. All three blanks hold the same number. What is it?

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

D. 153

89. Which sign makes this true? $63 \ ? \ 9 = 7$

A. plus

B. minus

C. times

D. divided by

90. Which sign makes this true? $9 \ ? \ 7 = 63$

A. plus

B. times

C. minus

D. divided by

91. Solve: $? \times ? = 64$. Both blanks hold the same number. What is it?

A. 32

B. 16

C. 8

D. 9

92. Solve: $3 \times ? + 5 = 38$. What number goes in the blank?

A. 11

B. 33

C. 12

D. 10

93. Solve: $2 \times ? - 7 = 31$. What number goes in the blank?

- A. 12
- B. 38
- C. 21
- D. 19

94. Which sign makes this true? $34 ? 19 = 15$

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

95. Solve: $5 \times ? - 12 = 48$. What number goes in the blank?

- A. 12
- B. 60
- C. 14
- D. 10

96. Solve: $? \div 4 + 9 = 20$. What number goes in the blank?

- A. 11
- B. 29
- C. 44
- D. 40

97. Solve: $? \div 3 - 8 = 5$. What number goes in the blank?

- A. 13
- B. 15
- C. 42
- D. 39

98. Each ? stands for the same number: $? \times ? + ? = 42$. What is the number?

- A. 7
- B. 6
- C. 5
- D. 21

99. What number comes next? 6, 15, 24, 33, ?

- A. 42
- B. 41
- C. 43
- D. 45

100. What number comes next? 120, 112, 104, 96, ?

- A. 86
- B. 88
- C. 80
- D. 94

101. What number comes next? 13, 25, 37, 49, ?

- A. 60
- B. 62
- C. 61

D. 73

102. What number comes next? 200, 185, 170, 155, ?

A. 145

B. 135

C. 140

D. 130

103. What number comes next? 11, 12, 14, 17, 21, ?

A. 26

B. 25

C. 27

D. 30

104. What number comes next? 5, 6, 9, 14, 21, ?

A. 28

B. 29

C. 35

D. 30

105. What number comes next? 9, 27, 81, 243, ?

A. 486

B. 729

C. 324

D. 1215

106. What number comes next? 1280, 640, 320, 160, ?

- A. 80
- B. 40
- C. 120
- D. 100

107. What number comes next? 4, 20, 100, 500, ?

- A. 1000
- B. 2000
- C. 5000
- D. 2500

108. What number comes next? 972, 324, 108, 36, ?

- A. 18
- B. 24
- C. 12
- D. 9

109. What number comes next? 12, 22, 16, 26, 20, 30, ?

- A. 34
- B. 40
- C. 24
- D. 14

110. What number comes next? 50, 47, 54, 51, 58, 55, ?

- A. 62
- B. 52
- C. 59
- D. 65

111. What number comes next? 3, 40, 6, 35, 9, 30, 12, ?

- A. 15
- B. 20
- C. 35
- D. 25

112. What number comes next? 2, 100, 4, 90, 6, 80, 8, ?

- A. 10
- B. 70
- C. 60
- D. 72

113. What number comes next? 1, 50, 2, 45, 4, 40, 8, ?

- A. 16
- B. 30
- C. 32
- D. 35

114. What number comes next? 4, 9, 19, 39, ?

- A. 78
- B. 79
- C. 80

D. 59

115. What number comes next? 6, 11, 21, 41, ?

A. 81

B. 82

C. 80

D. 61

116. What number comes next? 4, 7, 14, 17, 34, ?

A. 68

B. 40

C. 37

D. 51

117. What number comes next? 10, 17, 31, 59, ?

A. 118

B. 113

C. 87

D. 115

118. What number comes next? 1, 2, 6, 24, ?

A. 120

B. 48

C. 96

D. 144

119. In a 2 by 2 grid, the top row shows a small grey hexagon, then a large grey hexagon. The bottom row shows a small grey cross, then a missing figure. Which figure completes the grid?

- A. a small grey cross
- B. a large grey cross
- C. a large white cross
- D. a large grey hexagon

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

- A. one white heart
- B. two black hearts
- C. two white hearts
- D. three white hearts

121. In a 2 by 2 grid, the top row shows a white pentagon, then a black pentagon. The bottom row shows a white arrow, then a missing figure. Which figure completes the grid?

- A. a white arrow
- B. a black arrow
- C. a black pentagon
- D. a striped arrow

122. In a 2 by 2 grid, the top row shows a plain circle, then a circle with a dot inside. The bottom row shows a plain square, then a missing figure. Which figure completes the grid?

- A. a plain square
- B. a dot with no square
- C. a circle with a dot inside
- D. a square with a dot inside

123. In a 2 by 2 grid, the top row shows a white arrow pointing up, then a white arrow pointing right. The bottom row shows a black triangle pointing up, then a missing figure. Which figure completes the grid?

- A. a black triangle pointing right
- B. a black triangle pointing left
- C. a black triangle pointing up
- D. a white triangle pointing right

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

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

125. In a 2 by 2 grid, the top row shows a box with a black dot in its bottom left corner, then a box with a black dot in its bottom right corner. The bottom row shows a box with a white square in its top left corner, then a missing figure. Which figure completes the grid?

- A. a white square in the top left corner
- B. a white square in the bottom right corner
- C. a white square in the top right corner
- D. a black square in the top right corner

126. In a 2 by 3 grid, the top row shows one small black dot, two small black dots, then three small black dots. The bottom row shows one small white square, two small white squares, then a missing figure. Which figure completes the grid?

- A. three small black squares
- B. three small white squares

- C. two small white squares
- D. four small white squares

127. In a 2 by 3 grid, the top row shows a white diamond, a grey diamond, then a black diamond. The bottom row shows a white circle, a grey circle, then a missing figure. Which figure completes the grid?

- A. a grey circle
- B. a black diamond
- C. a striped circle
- D. a black circle

128. In a 2 by 3 grid, the top row shows a white triangle, a white square, then a white pentagon. The bottom row shows a grey triangle, a grey square, then a missing figure. Which figure completes the grid?

- A. a grey pentagon
- B. a grey hexagon
- C. a white pentagon
- D. a grey circle

129. In a 2 by 3 grid, the top row shows a line pointing up, a line pointing right, then a line pointing down. The bottom row shows an arrow pointing up, an arrow pointing right, then a missing figure. Which figure completes the grid?

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

130. In a 2 by 3 grid, the top row shows a vertical line, a horizontal line, then a plus sign made from both. The bottom row shows a slanted line leaning right, a slanted line leaning left, then a missing figure. Which figure completes the grid?

- A. a plus sign
- B. an X shape
- C. a single slanted line
- D. a square

131. In a 3 by 3 grid, row one shows one, two, then three black dots. Row two shows two, three, then four black dots. Row three shows three, four, then a missing figure. Which figure completes the grid?

- A. six black dots
- B. four black dots
- C. three black dots
- D. five black dots

132. In a 3 by 3 grid, row one shows one, two, then three white circles. Row two shows one, two, then three white squares. Row three shows one white triangle, two white triangles, then a missing figure. Which figure completes the grid?

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

133. In a 3 by 3 grid, row one shows a white circle, a grey circle, then a black circle. Row two shows a white square, a grey square, then a black square. Row three shows a white triangle, a grey triangle, then a missing figure. Which figure completes the grid?

- A. a black triangle
- B. a grey triangle
- C. a black square
- D. a white triangle

134. In a 3 by 3 grid, row one shows a circle, a square, then a triangle. Row two shows a square, a triangle, then a circle. Row three shows a triangle, a circle, then a missing figure. All the shapes are white. Which figure completes the grid?

- A. a white circle
- B. a white triangle
- C. a white square
- D. a white star

135. In a 3 by 3 grid, row one shows a white circle, a grey circle, then a black circle. Row two shows a grey circle, a black circle, then a white circle. Row three shows a black circle, a white circle, then a missing figure. Which figure completes the grid?

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

136. In a 3 by 3 grid, row one shows an arrow pointing up, right, then down. Row two shows an arrow pointing right, down, then left. Row three shows an arrow pointing down, left, then a missing figure. Which figure completes the grid?

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

137. In a 3 by 3 grid, every row shows a small circle, a medium circle, then a large circle. The circles in row one are white and the circles in row two are grey. In row three, the first two circles are black, and the last figure is missing. Which figure completes the grid?

- A. a large grey circle

- B. a large black circle
- C. a medium black circle
- D. a small black circle

138. In a 3 by 3 grid, row one shows a white square, a black dot, then a white square with a black dot in the center. Row two shows a white triangle, a black dot, then a white triangle with a black dot in the center. Row three shows a white circle, a black dot, then a missing figure. Which figure completes the grid?

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

139. A square sheet of paper is folded in half once. Three holes are punched through the folded paper, away from the fold. How many holes does the unfolded sheet have?

- A. 6 holes
- B. 3 holes
- C. 4 holes
- D. 9 holes

140. A square sheet is folded in half, then folded in half again, making four layers. One hole is punched through all the layers, away from every fold. How many holes does the unfolded sheet have?

- A. 2 holes
- B. 3 holes
- C. 4 holes
- D. 8 holes

141. A long paper strip is folded like a letter. The left third is folded over the middle, then the right third is folded on top, making three layers. One hole is punched through all three layers, away from the creases. How many holes does the unfolded strip have?

- A. 2 holes
- B. 4 holes
- C. 3 holes
- D. 6 holes

142. A sheet is folded in half three times, making eight layers. One hole is punched through all of them, away from the folds. How many holes does the unfolded sheet have?

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

143. A square sheet is folded in half twice, making four layers. Two holes are punched through the folded paper, away from the folds. How many holes does the unfolded sheet have?

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

144. A strip is folded like a letter into three layers. Two holes are punched through all three layers, away from the creases. How many holes does the unfolded strip have?

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

145. A square sheet is folded in half by bringing its left edge over to its right edge. A hole is punched so its center sits exactly on the crease, halfway up the fold. Which choice describes the unfolded sheet?

- A. Two holes side by side in the middle of the sheet
- B. One hole near the left edge of the sheet
- C. Two holes, one near each side edge of the sheet
- D. One hole in the middle of the sheet, on the center line

146. A square sheet of paper is folded in half by bringing its top edge down to its bottom edge. One hole is punched near the right side of the folded shape, halfway between the crease and the open edge. Which choice describes the unfolded sheet?

- A. One hole on the right side, near the bottom
- B. Two holes at the same height, one on each side
- C. Two holes on the right side, one high and one low
- D. Two holes on the right side, both low down

147. A square sheet of paper is folded in half by bringing its right edge over to its left edge. One hole is punched near the top of the folded shape, close to the open edge. Which choice describes the unfolded sheet?

- A. Two holes near the top, both close to the center line
- B. Two holes near the top, one close to each side edge
- C. One hole near the top, close to the left edge
- D. Two holes near the bottom, one close to each side edge

148. A square sheet is folded in half by bringing its left edge over to its right edge. One hole is punched exactly on the crease, and another is punched near the bottom, away from the crease. How many holes does the unfolded sheet have?

- A. 3 holes
- B. 2 holes
- C. 4 holes
- D. 5 holes

149. A square sheet is folded in half by bringing its bottom edge up to its top edge. One hole is punched near the left edge of the folded shape, very close to the crease. Which choice describes the unfolded sheet?

- A. Two holes near the left edge, one just above and one just below the center line
- B. Two holes near the left edge, one near the top corner and one near the bottom corner
- C. One hole near the left edge, right on the center line
- D. Two holes just above and below the center line, one near each side edge

150. A square sheet is folded along the line from its top left corner to its bottom right corner, so the top right corner lands on the bottom left corner. One hole is punched close to the corner where those two corners met. Which choice describes the unfolded sheet?

- A. Two holes, near the top left and bottom right corners
- B. One hole, near the bottom left corner
- C. Two holes close together at the center of the sheet
- D. Two holes, near the top right and bottom left corners

151. A square sheet is folded corner to corner along a diagonal to make a triangle. One hole is punched very close to the middle of the crease, just inside the triangle. Which choice describes the unfolded sheet?

- A. One hole at the center of the sheet, right on the fold line
- B. Two holes at the center, one on each side of the fold
- C. Two holes, each close to a different corner of the sheet
- D. Four holes, evenly spaced around the center of the sheet

152. A square sheet is folded in half by bringing the top edge down to the bottom edge, then in half again by bringing the left edge over to the right edge, making a small square. One hole is punched near the corner of the small square that was the center of the original sheet. Which choice describes the unfolded sheet?

- A. Four holes, one near each corner of the sheet
- B. One hole in the center of the sheet
- C. Four holes close together around the center of the sheet
- D. Two holes in the center, one above the other

153. A square sheet is folded in half by bringing the top edge down to the bottom edge, then in half again by bringing the left edge over to the right edge, making a small square. One hole is punched near the corner of the small square that was a corner of the original sheet. Which choice describes the unfolded sheet?

- A. Four holes, one near each corner of the sheet
- B. Four holes close together around the center of the sheet
- C. One hole near one corner of the sheet
- D. Two holes, one near each top corner of the sheet

154. A square sheet is folded in half by bringing the top edge down to the bottom edge, then in half again by bringing the right edge over to the left edge. One hole is punched near the left side of the small square, halfway between its top and bottom. Which choice describes the unfolded sheet?

- A. Four holes close together around the center of the sheet
- B. Two holes near the left edge, one high and one low
- C. Four holes in a straight row across the middle of the sheet
- D. Four holes: a high and a low one near each side edge

155. A square sheet is folded in half by bringing the top edge down to the bottom edge, 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 square, halfway between its left and right sides. Which choice describes the unfolded sheet?

- A. Four holes close together around the center of the sheet
- B. Four holes near the four corners of the sheet
- C. Four holes: two just above and two just below the middle line
- D. Two holes just above and below the middle line, on the left half only

156. A square sheet is folded in half by bringing the right edge over to the left edge, then folded in half again the same way, making a narrow strip. One hole is punched halfway down the strip, midway between its left edge and its newest crease. Which choice describes the unfolded sheet?

- A. Four holes in a row, all bunched on the left half of the sheet
- B. Four holes in a straight row, evenly spaced across the middle of the sheet
- C. Two holes in a row, near the left and right edges
- D. Four holes in two close pairs, one pair on each side of the sheet

157. A square sheet is folded in half by bringing the left edge over to the right edge, then in half again by bringing the top edge down to the bottom edge, making a small square. One hole is punched near the corner that was the center of the sheet, and another hole is punched near the corner that was a corner of the sheet. How many holes does the unfolded sheet have?

- A. 4 holes
- B. 6 holes
- C. 8 holes
- D. 16 holes

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

- A. a white pentagon
- B. a grey pentagon
- C. a striped pentagon
- D. a black pentagon

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

- A. a striped triangle
- B. a striped square
- C. a striped circle
- D. a striped hexagon

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

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

161. Three figures are shown. The first is a small white circle. The second is a small black square. The third is a small grey star. Which figure is most like the first three?

- A. a large white heart
- B. a large black heart
- C. a large grey heart
- D. a small striped heart

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

- A. a star with one dot inside
- B. a star with two dots inside
- C. a star with three dots inside
- D. a star with no dots inside

163. Three figures are shown. The first is a black dot above a white square. The second is a black dot above a white circle. The third is a black dot above a white triangle. Which figure is most like the first three?

- A. a black dot above a white star
- B. a black dot below a white star
- C. a black dot beside a white star
- D. a black dot inside a white star

164. Three figures are shown. The first is three black dots in a straight row. The second is three black dots in a triangle. The third is three black dots in a curve. Which figure is most like the first three?

- A. two black dots in a zigzag
- B. four black dots in a zigzag
- C. three black dots in a zigzag
- D. five black dots in a zigzag

165. Three figures are shown. The first is a circle with straight up-and-down stripes. The second is a square with straight up-and-down stripes. The third is a star with straight up-and-down stripes. Which figure is most like the first three?

- A. a heart with side-to-side stripes
- B. a heart with slanted stripes
- C. a heart with up-and-down stripes
- D. a heart with small dots

166. Three figures are shown. The first is a white square. The second is a grey rectangle. The third is a black diamond. Which figure is most like the first three?

- A. a white triangle
- B. a white pentagon
- C. a white circle

D. a striped square

167. Three figures are shown. The first is a white square. The second is a white triangle. The third is a white five-pointed star. Which figure is most like the first three?

- A. a white circle
- B. a white hexagon
- C. a white oval
- D. a white heart

168. Three figures are shown. The first is a tall thin white rectangle. The second is a tall thin grey oval. The third is a tall thin black triangle. Which figure is most like the first three?

- A. a tall thin striped diamond
- B. a short wide striped diamond
- C. a wide flat striped oval
- D. a small striped square

169. Three figures are shown. The first is a circle split down the middle, with its left half black and its right half white. The second is a square split the same way. The third is a triangle split the same way. Which figure is most like the first three?

- A. a star with its left half white and right half black
- B. a star with its left half black and right half white
- C. a star with its top half black and bottom half white
- D. a star that is all black

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

- A. a black star inside a white pentagon
- B. a white star beside a black pentagon
- C. a white star inside a black pentagon
- D. a grey star inside a black pentagon

171. Three figures are shown. The first is a white circle with a black stripe running side to side across its middle. The second is a white square with the same stripe. The third is a white triangle with the same stripe. Which figure is most like the first three?

- A. a white star with a side-to-side black stripe
- B. a white star with an up-and-down black stripe
- C. a white star with a slanted black stripe
- D. a white star with a black dot in its middle

172. Three figures are shown. The first is two white circles touching. The second is two white squares touching. The third is two white triangles touching. Which figure is most like the first three?

- A. one white star alone
- B. two white stars far apart
- C. a white star touching a white circle
- D. two white stars touching

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

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

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

- A. a large white star holding a small black circle
- B. a large black star holding a small white star
- C. a large white star holding a small grey star
- D. a large white star holding a small black star

175. Three figures are shown. The first is a circle with a smaller circle on top. The second is a square with a smaller square on top. The third is a triangle with a smaller triangle on top. Which figure is most like the first three?

- A. a star with a smaller star on top
- B. a star with a smaller star underneath
- C. a star with a smaller circle on top
- D. a star with a smaller star beside it

176. Three figures are shown. The first is a black circle left of a white circle. The second is a black square left of a white square. The third is a black triangle left of a white triangle. Which figure is most like the first three?

- A. a white star left of a black star
- B. a black star left of a white circle
- C. a black star left of a white star
- D. a black star above a white star

Practice Exam 9: Answer Key and Explanations

1. A — A drum is played by making it beat, and a bell is played by making it ring. Both pairs name the action that makes the instrument sound. Read, jump, and spill are actions too, but a bell cannot do any of them to make music. Only ring matches the way beat matches drum.

2. D — A guitar is one kind of instrument, and a sculpture is one kind of artwork. Each pair moves from a single thing to the larger group it belongs to. Season, vegetable, and country are groups too, but a sculpture does not belong to any of them. Only artwork names the group that holds sculptures, just as instrument holds guitars.

3. B — Loud and soft are opposites, since one means a big sound and the other a gentle sound. The opposite of a high note is a low note. Tall and top are close in meaning to high, so they repeat the idea instead of reversing it. Sing is a different kind of word, so low is the only true opposite.

4. C — A pen is a tool used to write, and a brush is a tool used to paint. Singing needs a voice, digging needs a shovel, and cutting needs scissors or a knife. A brush cannot do any of those jobs well, so paint is the only action that matches the way write matches pen.

5. B — A painter uses a brush to make marks on a canvas, and a drummer uses a drumstick to strike the drum. Each pair connects a performer with the tool held in the hand. Scissors, a ladder, and a spoon are tools for cutting, climbing, and eating, so none of them helps a drummer make music.

6. A — A singer is the person who makes a song, and a painter is the person who makes a painting. A museum and a frame are places or objects around a painting, and paint is only a material used to make it. Neither of those names the person who creates the work, so painter is correct.

7. C — A potter shapes clay into a pot, and a knitter turns yarn into a sweater. Each pair names a material and the thing made from it. A bowl is made from clay, not yarn. Paint is a material of its own, and a song is made from sound, not from soft strands. Only a sweater can be made from yarn.

8. D — A conductor leads the musicians of an orchestra, and a teacher leads the students of a class. Both pairs match a leader with the group being led. A pencil and homework are things a teacher might use or give, but nobody leads them. Recess is a break from lessons, so only class is a group a teacher guides.

9. C — A mural is made by painting on a wall, and a quilt is made by sewing pieces of cloth together. The second word in each pair is the action used to create the first. A cook bakes bread, a sculptor carves wood, and a worker polishes shoes, but none of those actions builds a quilt.

10. A — Notes are joined together to build a melody, and words are joined together to build a sentence. Each pair shows a small piece and the larger thing it builds. A letter is smaller than a word, so it runs the pattern backward. Ink and page are materials for writing, not something that words build, so sentence is right.

11. B — An actor performs on a stage, and a swimmer moves through water in a pool. Each pair joins a person with the place where the activity happens. A towel and a medal are things a swimmer might own or win, and a race is an event rather than a place. Only the pool gives a swimmer a place to swim.

12. D — A tuba plays very low sounds, and a piccolo, which is a tiny flute, plays very high sounds. The second word in each pair describes the pitch of the instrument. Heavy fits a big tuba, but not the pitch of a piccolo. Slow and wide do not describe how high or low a sound is, so high is best.

13. C — A gallery is a building that holds and shows paintings, and a library is a building that holds and lends books. Each pair joins a place with what is kept inside it. Songs are played in a concert hall, tickets are sold at a theater, and costumes are worn on a stage, so only books belong in a library.

14. A — A whisper is a quiet way of speaking, and a shout is a loud way of speaking. In the same way, a hum is a quiet way of making music, and singing is the fuller, louder way. Sleep, draw, and walk are not ways of making music with the voice, so they cannot be paired with hum like that.

15. D — An easel holds up a painting so the artist can work on it, and a music stand holds up sheet music for the player. Both pairs match a holder with the thing it holds. An audience sits in seats, a trumpet is played in the hands, and a ticket is kept in a pocket, not on a stand.

16. B — A sculptor carves stone with a chisel, and a tailor sews clothing with a needle. Each pair joins a tool with the worker who depends on it. A farmer uses a tractor, a pilot flies with controls, and a baker works with an oven and a mixing bowl, so none of these workers uses a needle to do the job.

17. B — Clay pottery is baked hard inside a kiln, and bread is baked inside an oven. Each pair links a thing with the hot place that bakes it. A sink holds water, a plate holds food that is already cooked, and a shelf only stores things. Only an oven turns dough into bread, so it matches the kiln.

18. D — An overture is the music played at the start of a show, and a finale is the music played at the very end. Each pair joins a part of the performance with where it falls in the show. An echo, a solo, and a chorus can happen at any time, so only end names the finale's place.

19. A — A harp makes sound when its strings are plucked, and a drum makes sound when its skin is struck. Each pair joins an instrument with the way it is played. Blowing belongs to a flute, and bowing belongs to a violin, so neither fits a drum. Folding does not make music at all, which leaves striking.

20. C — A choir is a group made up of many singers, and a band is a group made up of many musicians. Each pair joins a group with the people in it. Stages and tickets are not people, and notes are only sounds that musicians play. Only musicians are the members that make up a band.

21. A — People show they enjoyed a song by clapping when it ends. Clap is the only choice that fits what an audience does after a performance. Melt and sink describe what ice or a stone might do, and pour describes liquid. None of those make sense for people who just finished listening to music, so clap is best.

22. C — A crayon is a drawing tool, so Mia would use it to draw a picture. The sentence needs an action that makes a picture, and draw is the only one that does. Hear, smell, and taste are ways of sensing the world, and a crayon cannot be used for any of them.

23. B — A singer uses her throat to make her voice, so a sore throat is the problem that warm tea would soothe. An elbow, a knee, and an ankle are body parts too, but none of them are used for singing, and tea would not help them. The clue singer points to the throat.

24. D — Mixing blue and yellow paint makes green, like the color of leaves. The other colors need different mixes. Purple comes from red and blue, orange comes from red and yellow, and pink comes

from red and white. Since the sentence names blue and yellow, green is the only color the artist could have made.

25. A — A tune can be cheerful, which means happy and bright, and that fits a marching band on a street. Wooden, narrow, and damp describe things we can touch or measure, such as a box, a path, or a towel. A sound cannot be wooden, narrow, or damp, so cheerful is the one word that describes music well.

26. D — A potter works with wet clay and shapes it into objects people can hold, such as a bowl. A sunrise, a whisper, and a mile are things we see, hear, or measure, but we cannot shape clay into them. The clue smooth also tells us the answer is a solid object, so bowl is the only sensible word.

27. B — Dancers wear costumes on stage, and bright ones are easy to spot from a distance. Homework and lessons are school work and cannot be worn. Breezes are gentle winds that nobody can wear either. Only costumes are clothing, and the word bright tells us the clothing must stand out, so costumes completes the sentence best.

28. C — People cover their ears when a sound is very loud, so loud fits the sentence. A silent or gentle solo would not bother anyone's ears. A distant solo would be far away, which does not match people sitting near the front. The words so and that show a strong result, and only loud explains why ears were covered.

29. D — Ten students needed to share the work, so the job must have been huge, meaning very large. A tiny job could be done by one person, so that choice breaks the clue. Lazy describes a person, not a job, and quiet describes sound rather than the amount of work. Only huge explains why so many helpers were needed.

30. A — The word but shows a change from nervous to calm. Her fear faded, which means it slowly went away, once she began to sing. Grow, spread, and rise all mean the fear got bigger or stronger, and that would not make sense after the word but. Only fade fits the change the sentence describes.

31. B — Chipping off one tiny piece at a time takes a slow, careful way of working, which is patiently. Rudely describes how someone treats other people, and suddenly describes something that happens in a moment, so neither fits slow chipping. Hungrily describes eating. The clue one tiny piece at a time leads to patiently.

32. C — The word although sets up a surprise: the violin is old, yet its sound is still good. Sweet describes a pleasant sound. Dusty, crooked, and torn describe how an object looks or feels, not how it sounds, and they would not be a surprise next to old. Only sweet works as a sound word that also gives the contrast.

33. C — Students are asked to repeat a rhythm exactly, so they must copy it, which means do it the same way. Bury, sell, and lose are things people do with objects, not with a rhythm they tap out. The words repeat it exactly give the clue, so copy is the only choice that matches the activity.

34. B — Laughing out loud shows that something is funny. Even the shyest child laughed, so the play must have been very amusing. A sad, boring, or scary play would not make someone laugh. The clue is the laughing, so funny is the only word that explains the reaction of the audience.

35. A — Sleeping babies should not be woken, so the choir would sing softly and gently. A booming voice would be very loud and wake them. A frantic voice sounds rushed and upset, and a rusty voice sounds rough and out of practice. None of those help babies sleep, so gentle is the word that fits the reason given.

36. D — When the conductor raises a baton, everyone stops talking and waits, so the room becomes silent. Stormy describes weather, sticky describes how a surface feels, and bumpy describes a rough road. None of those can describe a quiet room full of musicians, so silent is the best word for the moment.

37. D — If visitors cannot tell a painting from a photograph, then the painting looks just like real life, which means realistic. A blurry painting would be easy to tell apart, because photos are usually sharp. Crooked and tiny describe the shape and size of a painting, not how much it looks like a photo. Realistic is the clear fit.

38. C — Showing something to everyone you meet means you feel good about it, so Ravi felt proud. Someone who is ashamed or worried would try to hide the work, not show it around. Sleepy describes tiredness, which does not explain the wish to share a sculpture. The word showed is the clue, so proud is correct.

39. A — People practice before a show, so the dancers rehearsed, and the performance ran smoothly. The swapped pair says a performance rehearsed and dancers ran smoothly, which is backward. Tickets and seats cannot rehearse. Lights cannot rehearse either, and rehearsed is the wrong kind of word for the second blank. Only the first pair makes both parts of the sentence sensible.

40. B — A catchy melody is easy to remember, so children could hum it after just one listen. A complicated melody would be hard to remember, and a forgettable melody is one people do not remember at all, which is the opposite. Ancient means very old and does not explain how easy a tune is to learn. Only catchy fits the clue.

41. B — Drum, flute, and harp are all musical instruments that people play to make sound. A guitar is an instrument too, so it joins the group. A brush, a canvas, and clay are art supplies used for painting and sculpting, not for playing music. The shared idea is instruments, which makes guitar the one word that belongs.

42. C — Red, blue, and yellow are all colors, and they are the three main colors that paint mixing starts from. Green is a color too, so it fits the group. Circle is a shape, loud describes sound, and tall describes height. None of those three words names a color, so green is the only word that belongs.

43. A — Pencil, marker, and crayon are all tools that leave a colored mark when you draw. Chalk also leaves a mark, so it joins them. Paper is what you draw on, an eraser takes marks away, and a frame holds a finished picture. None of those make marks, so chalk is the only word that belongs.

44. D — Painter, sculptor, and potter are all people who make art with their hands. An illustrator is also a person who makes art, so that word belongs. A museum is a building, and a canvas and clay are materials the artists use. The group is made of artists, not places or supplies, so illustrator fits.

45. B — Sing, hum, and whistle are all ways to make music or sound with your mouth. To chant is also to make rhythmic sound with your voice, so it fits. Paint and jump use the hands and legs, and sleep makes no sound on purpose. Only chant shares the idea of making sounds with the mouth.

46. D — Loud, soft, and quiet all describe how much sound there is. Silent is another word about sound, since it means no sound at all. Heavy describes weight, rough describes how something feels to touch, and warm describes temperature. Only silent describes sound, so it is the word that belongs with the group.

47. A — Stage, curtain, and spotlight are all things found in a theater, where plays are performed. A costume is also something used in a play, so it belongs. A lunchbox, a ladder, and a blanket are everyday items that are not especially part of a theater. The shared idea is theater things, which makes costume the best choice.

48. C — Triangle, tambourine, and cymbal are all percussion instruments, which are played by hitting or shaking them. A drum is also struck to make sound. A cello is played with a bow, and a flute and a horn are played by blowing. Only the drum shares the way the first three are played, so it belongs with them.

49. C — Ballet, tap, and waltz are all kinds of dance. A tango is a dance too, so it joins the group. Opera is a kind of sung play, a poster is a printed picture, and a quilt is a sewn blanket. None of those are dances. The group is dances, which makes tango the word that belongs.

50. A — Clay, marble, and wood are all materials a sculptor can shape into a statue. Bronze is a metal that sculptors also use. Ink, canvas, and crayon are used for drawing and painting on flat surfaces, not for shaping into solid figures. The shared idea is sculpting materials, so bronze fits the group.

51. D — A composer writes music, a conductor leads musicians, and a pianist plays music, so all three are people who work in music. A violinist also plays music. A sculptor works with stone, an author writes books, and an actor performs in plays. Only the violinist shares the music job, so violinist belongs.

52. B — A lullaby, an anthem, and a march are all kinds of music, and each can be sung or played. A ballad is also a kind of song, so it fits the group. A portrait and a mural are paintings, and a statue is a sculpture. None of those are music, so ballad is the word that belongs.

53. A — Portrait, landscape, and still life are all types of paintings, grouped by what they show. A seascape is a painting of the sea, so it belongs. A statue is carved, a melody is heard, and a poem is read. None of those are paintings, which makes seascape the only word that fits the group.

54. C — Strings, brass, and woodwind are three of the four families of instruments in an orchestra. Percussion is the fourth family, so it belongs. Chorus, tempo, and volume are music words, but they are not groups of instruments. A chorus is a group of singers, tempo is speed, and volume is loudness, so percussion is correct.

55. B — Whole, half, and quarter notes are all names for notes by how long they are held, and each is shorter than the one before. An eighth note continues that list, since it is held even less time. High, sour, and final notes describe pitch, mistakes, or position, not how long a note lasts, so eighth note belongs.

56. D — Rhythm, melody, and harmony are all parts that make up music. Tempo, which means how fast the music goes, is another part of music. To sculpt is an action in art, pigment is a coloring material, and an easel holds a painting. None of them are parts of a song, so tempo is the only word that belongs.

57. D — Line, shape, and color are all basic building blocks that artists use to make a picture, and texture, meaning how a surface looks or feels, is another one. Lyric, chorus, and scale are words about songs and music, not about visual art. The group is the elements of art, so texture is the correct word to add.

58. A — Opera, musical, and ballet are all shows performed live on a stage for an audience. A puppet show is also a live performance, so it belongs. A painting, a statue, and a mural are artworks that stay still and are looked at, not performed. The group is stage shows, which makes puppet show the best choice.

59. C — Collage, mosaic, and mural are all kinds of pictures made to be seen, usually by covering a flat surface with paper, tiles, or paint. A poster is also a flat picture made to be looked at. Symphony, sonata, and chorus are music words that are heard instead of seen, so poster is the word that belongs.

60. B — In the first pair, 7 becomes 19, which is an increase of 12, and 10 becomes 22, which is also 12 more. Adding 12 to 13 gives 25. The choice 24 adds only 11 and the choice 26 adds 13, so both break the rule. The choice 35 adds 22, copying the second number of the pair.

61. A — Each second number is 7 less than the first, since 48 minus 7 is 41 and 35 minus 7 is 28. Taking 7 from 52 leaves 45. The choice 44 subtracts 8 and the choice 46 subtracts 6, so each one misses the rule. The choice 59 adds 7 instead of subtracting it, which goes the wrong way.

62. C — The rule is to subtract 5, because 23 minus 5 is 18 and 31 minus 5 is 26. Taking 5 from 40 gives 35. The choices 34 and 36 are each off by one, which means they subtract 6 and 4. The choice 45 adds 5, which moves the number up when both given pairs move it down.

63. D — Each second number is 7 times the first, since 6 times 7 is 42 and 9 times 7 is 63. Multiplying 4 by 7 gives 28. The choice 24 is 4 times 6 and the choice 32 is 4 times 8, so they use the wrong multiplier. The choice 11 adds 7, but adding cannot turn 6 into 42.

64. B — Each second number is three times the first, because 17 times 3 is 51 and 12 times 3 is 36. Multiplying 25 by 3 gives 75. The choice 50 doubles 25 instead, and the choice 28 only adds 3. The choice 72 is close to 75 but comes from 24 times 3, not 25 times 3.

65. A — The second number is the first divided by 8, since 72 divided by 8 is 9 and 56 divided by 8 is 7. Dividing 40 by 8 gives 5. The choice 4 divides by 10 and the choice 6 does not come from any 8 fact. The choice 32 subtracts 8, but subtraction cannot turn 72 into 9.

66. D — Each second number is one third of the first, since 18 divided by 3 is 6 and 27 divided by 3 is 9. Dividing 45 by 3 gives 15. The choices 14 and 16 are each one away from the correct answer, so they are only guesses. The choice 48 adds 3, which makes the number bigger instead of smaller.

67. C — The second number is half of the first, because half of 86 is 43 and half of 52 is 26. Half of 38 is 19. The choices 18 and 20 are each one off, so they are close guesses and not the rule. The choice 76 doubles 38, which does the opposite of what both pairs do.

68. B — The second number is double the first, since 15 times 2 is 30 and 22 times 2 is 44. Doubling 19 gives 38. The choice 34 adds 15, copying the first pair, and the choice 36 is only 2 less than the true double. The choice 57 triples 19, which multiplies by 3 instead of 2.

69. B — The rule is to subtract 25, since 100 minus 25 is 75 and 60 minus 25 is 35. Taking 25 from 44 leaves 19. The choices 20 and 18 subtract 24 and 26, so they are each off by one. The choice 69 adds 25, which is the opposite direction from both given pairs.

70. C — The second number is the first multiplied by itself, since 4 times 4 is 16 and 6 times 6 is 36. Eight times 8 is 64. The choice 16 doubles 8, and the choice 32 multiplies 8 by 4, so neither matches 6 becoming 36. The choice 56 is 8 times 7, one multiplier short.

71. D — The second number is the square root of the first, because 8 times 8 is 64 and 9 times 9 is 81. Since 7 times 7 is 49, the answer is 7. The choice 6 is too small and the choice 8 is the answer for 64, not 49. The choice 42 subtracts 7, which does not fit the pairs.

72. A — Two steps are used: multiply by 3, then add 1. Five times 3 is 15, plus 1 is 16, and 8 times 3 is 24, plus 1 is 25. For 11, 33 plus 1 is 34. The choice 33 forgets to add 1, the choice 35 adds too much, and the choice 22 only adds 11.

73. B — The rule has two steps: multiply by 6, then subtract 1. Two times 6 is 12, minus 1 is 11, and 4 times 6 is 24, minus 1 is 23. For 5, 30 minus 1 is 29. The choice 30 forgets to subtract, the choice 28 subtracts too much, and the choice 11 repeats a number from the first pair.

74. D — The rule is to multiply by 4, then subtract 3. Five times 4 is 20, minus 3 is 17, and 9 times 4 is 36, minus 3 is 33. For 12, 48 minus 3 is 45. The choice 48 forgets to subtract, the choice 42 subtracts too much, and the choice 16 only adds 4.

75. C — The rule is to add 1 and then take half. Nine plus 1 is 10, and half of 10 is 5. Fifteen plus 1 is 16, and half of 16 is 8. For 21, 22 halved is 11. The choice 10 is half of 21 rounded down, and the choices 22 and 12 do not halve the number.

76. A — The rule is to take half and then subtract 1. Half of 30 is 15, minus 1 is 14, and half of 24 is 12, minus 1 is 11. For 18, half is 9 and minus 1 is 8. The choice 9 forgets to subtract, the choice 7 subtracts too much, and the choice 17 only subtracts 1.

77. A — The rule is to multiply by 10 and then add 10. Four times 10 is 40, plus 10 is 50, and 7 times 10 is 70, plus 10 is 80. For 9, 90 plus 10 is 100. The choice 90 skips the adding, the choice 99 is a near miss, and the choice 19 only adds 10.

78. D — The rule has two steps: add 6, then double. Four plus 6 is 10, doubled is 20, and 7 plus 6 is 13, doubled is 26. For 10, 16 doubled is 32. The choice 30 multiplies by 3, the choice 36 is another guess, and the choice 16 only adds 6 and forgets to double.

79. B — The rule is to add 4, then double. Three plus 4 is 7, doubled is 14, and 6 plus 4 is 10, doubled is 20. For 10, 14 doubled is 28. The choice 24 doubles first and then adds 4, in the wrong order. The choice 26 is a guess, and the choice 14 only adds 4.

80. C — To find the missing number, subtract: 52 minus 17 equals 35, and 17 plus 35 checks back to 52. The choice 69 comes from adding 17 and 52 instead of subtracting. The choices 34 and 36 are each one off, a common slip when counting up from 17, and neither makes the sum equal 52.

81. B — To undo a subtraction, add the number back: 44 plus 19 equals 63, and 63 minus 19 checks to 44. The choice 25 comes from subtracting 19 from 44, the wrong operation. The choices 62 and 64 are each one away from the true answer, so neither one makes the equation equal 44.

82. C — To find the missing part, subtract 37 from 100, which gives 63, and 100 minus 63 checks to 37. The choice 137 adds the numbers instead. The choice 62 is one too small, and the choice 73 comes from a slip in the tens place when taking away 37. Neither makes the equation equal 37.

83. A — Division undoes multiplication, so 56 divided by 7 gives 8, and 7 times 8 checks back to 56. The choice 49 comes from subtracting 7 from 56, and the choice 63 comes from adding 7. The choice 9 is the neighboring fact, since 7 times 9 is 63, not 56.

84. D — To undo a division, multiply: 13 times 6 equals 78, and 78 divided by 6 checks to 13. The choice 19 adds 6 to 13 instead. The choices 72 and 84 are the multiples of 6 on either side of 78, so each one gives 12 or 14 when divided by 6, not 13.

85. C — Divide to find the missing factor: 91 divided by 7 equals 13, and 13 times 7 checks back to 91. The choices 84 and 98 are multiples of 7 that sit on either side of 91, so they are not the answer to the blank. The choice 12 is one too small, since 12 times 7 is only 84.

86. D — Subtract the known part from the whole: 156 minus 89 equals 67, and 156 minus 67 checks back to 89. The choice 245 adds the two numbers instead. The choice 66 is one too small, and the choice 77 comes from a mistake when regrouping in the tens place, so neither one gives 89.

87. B — Two equal numbers that add to 46 must each be half of 46, which is 23, and 23 plus 23 checks to 46. The choices 22 and 24 are each one away, so they give 44 and 48. The choice 92 doubles 46 instead of halving it, which would give a total of 184.

88. A — Three equal numbers that add to 51 must each be one third of 51, which is 17, and 17 plus 17 plus 17 checks to 51. The choices 16 and 18 give totals of 48 and 54, so they miss. The choice 153 multiplies 51 by 3 when the problem needs division.

89. D — Try each sign. Sixty-three divided by 9 equals 7, so divided by makes the statement true. Sixty-three plus 9 equals 72, sixty-three minus 9 equals 54, and sixty-three times 9 equals 567, which are all far from 7. Only division shrinks 63 down to 7, so it is the correct sign.

90. B — Try each sign. Nine times 7 equals 63, so times makes the statement true. Nine plus 7 equals 16, nine minus 7 equals 2, and nine divided by 7 is a little more than 1, so none of those signs give 63. Only multiplication grows 9 up to 63, so it is the correct sign.

91. C — A number multiplied by itself that makes 64 is 8, since 8 times 8 equals 64. The choice 32 is half of 64 and the choice 16 is a quarter of it, so those come from splitting 64 instead of finding a square root. The choice 9 gives 81 when multiplied by itself, which is too big.

92. A — Work backward in two steps. First take away 5: 38 minus 5 is 33. Then divide by 3: 33 divided by 3 is 11. The choice 33 stops after the first step. The choices 12 and 10 are each one off, and they give 41 and 35 when put in the equation, not 38.

93. D — Work backward in two steps. First add 7 back: 31 plus 7 is 38. Then divide by 2: 38 divided by 2 is 19. The choice 12 subtracts 7 first, the wrong direction. The choice 38 stops after the first step, and the choice 21 gives 35 in the equation instead of 31.

94. B — Try each sign. Thirty-four minus 19 equals 15, so minus makes the statement true. Thirty-four plus 19 equals 53, thirty-four times 19 is much larger at 646, and thirty-four divided by 19 is less than 2. Only subtraction leaves exactly 15, so it is the correct sign for this equation, and the other three signs all miss.

95. A — Work backward in two steps. First add 12 back: 48 plus 12 is 60. Then divide by 5: 60 divided by 5 is 12. The choice 60 stops after the first step. The choices 14 and 10 give 58 and 38 in the equation, so neither one makes the result 48.

96. C — Work backward in two steps. First take away 9: 20 minus 9 is 11. Then multiply by 4: 11 times 4 is 44. The choice 11 stops after the first step, and the choice 29 adds 9 instead of subtracting it. The choice 40 gives 10 plus 9, which is only 19.

97. D — Work backward in two steps. First add 8: 5 plus 8 is 13. Then multiply by 3: 13 times 3 is 39. The choice 13 stops after the first step. The choice 15 comes from guessing, and the choice 42 gives 14 minus 8, which is 6, not 5. Check: 13 times 3 is 39, so it works.

98. B — Try small numbers. When the number is 6, 6 times 6 is 36, and 36 plus 6 is 42, so 6 works. The choice 7 gives 49 plus 7, which is 56, and the choice 5 gives 25 plus 5, which is 30. The choice 21 is half of 42, and it would make the total far too large.

99. A — The numbers go up by 9 each time, since 6 plus 9 is 15, 15 plus 9 is 24, and 24 plus 9 is 33. Adding 9 to 33 gives 42. The choices 41 and 43 are each off by one. The choice 45 adds 12, so none of them keep the same step of 9.

100. B — The numbers go down by 8 each time, since 120 minus 8 is 112, 112 minus 8 is 104, and 104 minus 8 is 96. Taking 8 from 96 gives 88. The choice 86 subtracts 10, the choice 80 subtracts 16, and the choice 94 subtracts only 2, so each breaks the steady step of 8.

101. C — The numbers go up by 12 each time, since 13 plus 12 is 25, 25 plus 12 is 37, and 37 plus 12 is 49. Adding 12 to 49 gives 61. The choices 60 and 62 are each off by one from that. The choice 73 adds 24, so none of them keep the same step of 12.

102. C — The numbers go down by 15 each time, since 200 minus 15 is 185, 185 minus 15 is 170, and 170 minus 15 is 155. Taking 15 from 155 gives 140. The choice 145 subtracts 10, the choice 135 subtracts 20, and the choice 130 subtracts 25, so each breaks the step of 15.

103. A — The steps grow by one each time: plus 1, plus 2, plus 3, plus 4. The next step is plus 5, and 21 plus 5 is 26. The choice 25 adds only 4 and repeats the last step. The choice 27 adds 6, which skips ahead, and the choice 30 adds 9, so none follow the growing pattern.

104. D — The steps are plus 1, plus 3, plus 5, plus 7, so each step grows by 2. The next step is plus 9, and 21 plus 9 is 30. The choice 28 adds 7 and repeats the last step. The choice 29 adds 8, which skips an odd number, and the choice 35 adds 14, which grows too fast.

105. B — Each number is 3 times the one before it, since 9 times 3 is 27, 27 times 3 is 81, and 81 times 3 is 243. Multiplying 243 by 3 gives 729. The choice 486 doubles 243, the choice 324 adds 81, and the choice 1215 multiplies by 5, so each one uses the wrong step.

106. A — Each number is half of the one before it, since 1280 divided by 2 is 640, then 320, then 160. Half of 160 is 80. The choice 40 halves twice, and the choices 120 and 100 come from subtracting 40 and 60. Only 80 keeps the pattern of dividing by 2.

107. D — Each number is 5 times the one before it, since 4 times 5 is 20, 20 times 5 is 100, and 100 times 5 is 500. Multiplying 500 by 5 gives 2500. The choices 1000 and 2000 multiply by 2 and 4, and the choice 5000 multiplies by 10, so each one breaks the rule of times 5.

108. C — Each number is one third of the one before it, since 972 divided by 3 is 324, then 108, then 36. One third of 36 is 12. The choice 18 is half of 36, the choice 24 subtracts 12, and the choice 9 divides by 4, so each one breaks the rule of dividing by 3.

109. C — The pattern alternates: plus 10, then minus 6. Twelve goes to 22, then down to 16, up to 26, down to 20, and up to 30. The next step is minus 6, so 30 becomes 24. The choices 34 and 40 keep adding, and the choice 14 subtracts 16, so none follow the alternating steps.

110. A — The pattern alternates: minus 3, then plus 7. Fifty goes to 47, up to 54, down to 51, up to 58, and down to 55. The next step is plus 7, so 55 becomes 62. The choice 52 subtracts 3 again, and the choices 59 and 65 add 4 and 10, so none follow the pattern.

111. D — Two lists are mixed together. The odd places go 3, 6, 9, 12, adding 3, and the even places go 40, 35, 30, subtracting 5. The next number is in the even list, so 30 minus 5 is 25. The choice 15 continues the first list, and the choices 20 and 35 skip or repeat the second list.

112. B — Two lists are mixed together. The odd places go 2, 4, 6, 8, adding 2, and the even places go 100, 90, 80, subtracting 10. The next number belongs to the even list, so 80 minus 10 is 70. The choice 10 continues the first list, the choice 60 skips a step, and the choice 72 is a guess.

113. D — Two lists are mixed together. The odd places double each time: 1, 2, 4, 8. The even places go down by 5: 50, 45, 40. The next number is in the even list, so 40 minus 5 is 35. The choice 16 doubles 8 and belongs to the first list, and the choices 30 and 32 break both patterns.

114. B — Each number is double the one before it, plus 1. Four doubled is 8, plus 1 is 9. Nine doubled is 18, plus 1 is 19, and 19 doubled is 38, plus 1 is 39. Doubling 39 gives 78, plus 1 is 79. The choice 78 forgets the plus 1, 80 adds 2, and 59 adds only 20.

115. A — Each number is double the one before it, minus 1. Six doubled is 12, minus 1 is 11. Eleven doubled is 22, minus 1 is 21, and 21 doubled is 42, minus 1 is 41. Doubling 41 gives 82, minus 1 is 81. The choice 82 forgets to subtract, 80 subtracts too much, and 61 adds only 20.

116. C — The pattern alternates: plus 3, then times 2. Four goes to 7, doubles to 14, goes up to 17, and doubles to 34. The next step is plus 3, so 34 becomes 37. The choice 68 doubles again, which repeats the last step, and the choices 40 and 51 add 6 and 17, which are not part of the pattern.

117. D — Each number is double the one before it, minus 3. Ten doubled is 20, minus 3 is 17. Seventeen doubled is 34, minus 3 is 31, and 31 doubled is 62, minus 3 is 59. Doubling 59 gives 118, minus 3 is 115. The choice 118 forgets to subtract, 113 subtracts 5, and 87 adds only 28.

118. A — Each number is the one before it multiplied by a number that grows: times 2, times 3, times 4. So the next multiplier is 5, and 24 times 5 is 120. The choice 48 doubles 24 and the choice 96 multiplies by 4, which repeats an earlier step. The choice 144 multiplies by 6, which skips ahead.

119. B — Across the top row, the hexagon keeps its shape and shade but grows from small to large. Applying that change to the small grey cross gives a large grey cross. The small grey cross repeats the first figure, the large white cross changes the shade by mistake, and the large grey hexagon brings back the top row's shape.

120. C — In the top row, the number of stars goes from one to two while the shade stays black. Doing the same to the white heart gives two white hearts. One white heart means nothing changed, two black hearts changes the shade, and three white hearts adds one heart too many.

121. B — The pentagon keeps its shape and size, but its shade changes from white to black. The same change on the white arrow gives a black arrow. A white arrow shows no change at all, a black pentagon swaps the shape back, and a striped arrow uses a shade that never appears in the top row.

122. D — The top row adds a dot inside the shape while the outline stays the same. Adding a dot inside the plain square gives a square with a dot inside. The plain square means no dot was added, the lone dot throws away the square, and the circle with a dot changes the outline to the top row's shape.

123. A — The arrow turns a quarter turn clockwise, from up to right, and its shade stays the same. The black triangle pointing up turns the same way to point right. Pointing left is a quarter turn the wrong way, pointing up is no turn, and the white triangle changes the shade, which never changes in the top row.

124. C — Two things change across the top row: the circle grows from small to large and turns from white to black. Applying both changes to the small white square gives a large black square. The large white square changes only the size, the small black square changes only the shade, and the large black circle changes the shape.

125. C — The top row moves the figure straight across from the left side to the right side, staying at the same height. The white square should move from the top left to the top right. Staying put shows no move, the bottom right corner moves it down as well, and the black square changes the shade.

126. B — The top row adds one more shape each step, going from one to two to three. The bottom row starts at one and two, so the next figure must have three. Shape and shade stay as in the bottom row, so it is white squares. Black squares change the shade, two repeats the middle, and four skips ahead.

127. D — Each row gets darker from left to right: white, grey, then black. The bottom row has already shown white and grey circles, so the next must be a black circle. A grey circle repeats the middle figure, a black diamond brings in the top row's shape, and a striped circle uses a shade that does not belong in the sequence.

128. A — Across the top row, the shapes gain one side each step: three, four, then five. The bottom row follows the same sides but is grey, so the last figure is a grey pentagon. A grey hexagon has six sides, which skips ahead, a white pentagon changes the shade, and a grey circle has no straight sides at all.

129. C — Each step in a row turns the figure a quarter turn clockwise: up, right, then down. The bottom row has the arrow at up and right, so the last arrow points down. An arrow pointing left is a half turn too far, pointing up is a repeat of the first, and a line pointing down changes the shape.

130. B — In the top row, the third figure combines the first two figures into one picture. The two slanted lines crossing each other make an X. A plus sign uses straight lines, not slanted ones, a single slanted line uses only one of the two, and a square has no lines that cross.

131. D — Every row adds one dot as it moves right, and every row starts one higher than the row above. Row three begins with three and four dots, so the next figure must have five. Six dots adds two, four dots repeats the middle figure, and three dots goes back to the start of the row.

132. B — Each row counts up from one to three, and each row uses its own shape. Row three uses white triangles, so its last figure is three white triangles. Two white triangles repeats the middle figure, three white squares uses the row above's shape, and three black triangles changes the shade, which stays white in every row.

133. A — Each row keeps one shape and moves from white to grey to black. Row three uses triangles, so the missing figure is a black triangle. A grey triangle repeats the middle figure, a white triangle repeats the first, and a black square has the right shade but belongs to row two instead of row three.

134. C — Each shape appears once in every row and once in every column. Row three already has a triangle and a circle, so the square is missing. A circle or a triangle would appear twice in the same row, and a white star is a new shape that does not belong in the pattern at all.

135. D — Each shade appears once in every row and once in every column. Row three already has black and white, so grey is missing, and the column above holds black and white too. A black circle or a white circle would repeat in the row, and a striped circle uses a shade that never appears in the grid.

136. A — Every step turns the arrow a quarter turn clockwise, both across the rows and down the columns. In row three, the arrow goes from down to left, so the next quarter turn clockwise points up. Pointing right is a half turn too far, pointing down repeats the first figure, and pointing left repeats the middle one.

137. B — Size grows left to right in every row, and shade stays the same inside a row. Row three is black, so the last circle is large and black. A large grey circle copies the row above, a medium black circle repeats the middle figure, and a small black circle repeats the first figure.

138. D — In every row, the third figure combines the first two by placing the black dot in the middle of the white shape. Row three should therefore show a white circle holding a black dot. A black circle with a white dot swaps the shades, a white circle alone leaves the dot out, and a lone dot leaves the shape out.

139. A — One fold makes two layers, so every punch goes through two layers and makes two holes. Three punches make 3 times 2, which is 6 holes. Three holes counts only the punches, four holes doubles only two of them, and nine holes treats the paper as having three layers, which one fold cannot make.

140. C — Two folds make four layers, and a single punch goes through every layer, so the sheet has four holes when opened. Two holes would come from one fold only, and three holes does not match any number of layers that two folds can make. Eight holes would need three folds, which would make eight layers.

141. C — Three layers means the punch passes through three pieces of paper, so the opened strip has one hole in each third, which is three holes. Two holes would count only two layers, four holes would need another layer, and six holes would double the count as if the strip had been folded in half instead of in thirds.

142. B — Each fold doubles the layers: two, then four, then eight. One punch through eight layers leaves eight holes. Six holes adds two for each fold instead of doubling, four holes matches only two folds, and three holes counts only the number of folds. Only eight matches the layers in the folded paper.

143. D — Four layers mean each punch makes four holes, and two punches make 2 times 4, which is 8 holes. Four holes counts only one punch, six holes adds a mistaken extra layer, and two holes counts only the punches without thinking about the folds at all. Only eight fits the four layers and the two punches.

144. A — Three layers mean each punch makes three holes, and two punches make 2 times 3, which is 6 holes. Three holes counts just one punch. Five holes adds the numbers instead of multiplying them, and nine holes treats the paper as having more layers than a letter fold makes, so six is the only count that fits.

145. D — A hole centered on the crease is cut through both halves of the fold, so it opens into a single hole on the center line. Two holes side by side would need the punch off the crease. A hole near the left edge or two holes near the side edges would need the punch near the open edge.

146. C — The crease runs across the middle, and the hole sits halfway between that crease and the bottom. Unfolding makes a mirror copy above the crease, so one hole is low and one is high, both on the right. One hole forgets the copy, left and right holes flip sides, and two low holes miss the mirror.

147. B — The open edge of the folded shape is the sheet's left edge, so the hole is close to it, and its mirror copy lands close to the right edge at the same height. Holes near the center line belong to a punch near the crease, one hole misses the copy, and holes near the bottom ignore the top.

148. A — The hole on the crease opens into just one hole, because it was cut through the fold itself. The hole away from the crease is copied across the fold and makes two holes. One plus two gives three. Two holes forgets the copy, four holes doubles the crease hole by mistake, and five adds too many.

149. A — The crease runs across the middle, and the hole is very close to it, so its mirror copy lies just across it. Both holes stay near the left edge, one just above and one just below the center line. Corner holes are far from the crease, one hole misses the copy, and holes near both side edges move sideways.

150. D — The punched corner is where the top right and bottom left corners were stacked, so the hole goes through both, leaving a hole near each of them. The top left and bottom right corners lie on the crease, so they stay untouched. One hole forgets the second layer, and holes at the center would need the punch near the crease.

151. B — The middle of the crease is the sheet's center, and the hole is just off the crease, so its mirror copy appears just across the line, giving two holes close together. One hole on the line needs a punch on the crease. Holes near corners and four holes do not match one fold and one punch.

152. C — Two folds make four layers, so one punch makes four holes. The punched corner was the center of the sheet, so every copy lands close to the center, one in each quarter. Holes near the corners would need the punch at the far corner. One hole or two holes ignore the four layers that two folds create.

153. A — Two folds make four layers, so the punch makes four holes. The punched corner was a corner of the sheet, and each of the four layers holds a different corner, so each copy appears near its own corner. Holes around the center would need the punch near the center. One hole or two holes miss the layers.

154. D — The hole is halfway up the small square, so one fold copies it high and low, and it is near the open left edge, so the other fold copies it near the right edge. That gives a high and a low hole on each side. Holes around the center, only two holes, or a row do not fit.

155. C — The top edge of the small square is the first crease, so the hole sits close to the sheet's middle line, and it is halfway across, so copies land in both halves. That makes four holes, two just above and two just below the middle. Holes at the center or the corners are in the wrong spot.

156. B — The strip is one quarter of the sheet wide, and the hole sits at one eighth of the way across. The first unfolding adds a copy at three eighths, and the second adds copies at five and seven eighths. That gives four holes in a row, equally spaced, which no other option shows: bunched, only two, or paired.

157. C — Two folds make four layers, so each punch makes four holes. Two punches make 2 times 4, which is 8 holes, four around the center and one near each corner. Four holes counts only one punch, six holes adds the numbers wrongly, and sixteen holes multiplies four layers by four punches, when only two punches were made.

158. D — The three shapes are all different, but every one is filled in solid black, so the shared feature is the black fill. A black pentagon has that same fill. The white pentagon, grey pentagon, and striped pentagon are each shaded differently, so none of them matches the black the first three share.

159. A — The shades change from figure to figure, but every figure is a triangle, so the shared feature is the triangle shape. A striped triangle is still a triangle. The striped square, circle, and hexagon all copy the stripes, but they are different shapes, so they do not match what the first three have in common.

160. B — The shapes and shades change, but each figure holds exactly two shapes, so the shared feature is the count of two. Two striped stars has that count. One star, three stars, and four stars all have a different number of shapes, so they cannot match, even though the stripes make them look different.

161. D — The shapes and shades are all different, but every figure is small, so the shared feature is the size. A small striped heart is small too. The large white, black, and grey hearts each use a shade the first three used, which can tempt you, but they are all large, so they break the only feature that matches.

162. B — The outer shapes all differ, but each one holds exactly two dots, so the shared feature is the pair of dots inside. A star with two dots inside has that. A star with one dot or three dots holds the wrong number, and a star with no dots holds none, so none match.

163. A — The white shapes change, but in every figure the black dot sits above the shape, so the shared feature is the dot's position. A black dot above a white star keeps that. Below, beside, and inside all put the dot in a different place, so they match the shades and the dot but not the position.

164. C — The way the dots are arranged changes each time, but every figure holds exactly three dots, so the shared feature is the count of three. Three dots in a zigzag keeps it. Two, four, and five dots in a zigzag copy the new arrangement but break the count, so they do not match.

165. C — The shapes change, but all three are filled with stripes that run straight up and down. A heart with up-and-down stripes has that same fill. Side-to-side stripes and slanted stripes run in different directions, and small dots are not stripes at all, so none of those match the first three.

166. D — The shades differ, but a square, a rectangle, and a diamond all have exactly four straight sides, so the shared feature is four sides. A striped square has four sides too. The triangle has three, the pentagon has five, and the circle has none, so none of them match, even though they share the white shade.

167. B — A square, a triangle, and a star are all made only of straight edges with corners, and no curves. A hexagon is made of straight edges too, so it fits. A circle and an oval are completely round, and a heart has curved lobes, so all three have curves that the first three do not have.

168. A — The shapes and shades change, but every figure is tall and thin, so the shared feature is the tall, thin form. A tall thin striped diamond has that. The short wide diamond has the shape but is wide, the flat oval is also wide, and the small square is neither tall nor thin, so each breaks the match.

169. B — In each figure, a line down the middle splits the shape into a black left half and a white right half. A star split the same way matches. Swapping the colors reverses the halves, a top and bottom split cuts the other direction, and an all-black star has no white half.

170. C — In every figure, a white shape sits inside a larger black shape. A white star inside a black pentagon follows that. Swapping the shades puts black inside white, a star beside the pentagon is not inside it, and a grey star changes the inner shade from white, so all three break the pattern.

171. A — Each figure is white with a black stripe crossing it from side to side, so the shared feature is the stripe and its direction. The white star with a side-to-side stripe matches. The up-and-down and slanted stripes run in other directions, and the black dot is not a stripe at all.

172. D — Each figure is made of two matching shapes that touch each other, so the shared feature is a touching pair of the same shape. Two white stars touching match. One star alone has no partner, two stars far apart do not touch, and a star touching a circle uses two different shapes, so each of these breaks the pattern.

173. B — Every figure holds exactly two shapes, and every shape is solid black, so two features are shared. Two black stars have both. Two white stars have the right count but the wrong shade, three black stars and one black star have the right shade but the wrong count, so only two black stars match on both.

174. D — In each figure, a small black copy of the same shape sits inside a large white shape. A large white star holding a small black star matches that. A small black circle is a different shape, swapped shades puts white inside black, and a small grey star changes the inner shade, so each of these breaks the pattern.

175. A — Each figure has a small copy of the same shape sitting on top of the big one. A star with a smaller star on top follows that. Putting the small star underneath or beside it changes its position, and a smaller circle on top is a different shape from the big star, so each breaks the pattern.

176. C — Each figure is a pair of matching shapes, with the black one on the left and the white one on the right. A black star left of a white star matches. Reversing the shades flips the order, using a circle changes one shape, and placing the stars one above the other changes the position.