

PRACTICE EXAM 8: 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. Car is to road as boat is to ____.

- A. sand
- B. mountain
- C. cloud
- D. water

2. Pilot is to airplane as captain is to ____.

- A. bicycle
- B. station
- C. ship
- D. tunnel

3. Wheel is to car as wing is to ____.

- A. bus
- B. airplane
- C. boat
- D. train

4. Arrive is to depart as come is to ____.

- A. go
- B. stay
- C. wait
- D. rest

5. Airport is to planes as harbour is to ____.

- A. trains
- B. cars
- C. bikes
- D. boats

6. Bus is to road as train is to ____.

- A. sky
- B. river
- C. track
- D. bridge

7. Pedal is to bicycle as oar is to ____.

- A. bus
- B. boat
- C. train
- D. skateboard

8. Thermometer is to temperature as speedometer is to ____.

- A. colour
- B. speed
- C. weight
- D. sound

9. Helmet is to cycling as life jacket is to ____.

- A. boating
- B. reading
- C. baking
- D. painting

10. Engine is to go as brake is to ____.

- A. honk
- B. shine
- C. steer
- D. stop

11. Railway is to train as runway is to ____.

- A. ship
- B. bus
- C. plane
- D. bike

12. Bicycle is to two as tricycle is to ____.

- A. three

- B. four
- C. one
- D. six

13. Car is to garage as plane is to ____.

- A. harbour
- B. platform
- C. hangar
- D. barn

14. Station is to train as bus stop is to ____.

- A. plane
- B. ship
- C. sled
- D. bus

15. Voyage is to ocean as flight is to ____.

- A. sky
- B. harbour
- C. road
- D. tunnel

16. Tunnel is to under as bridge is to ____.

- A. beside
- B. over
- C. inside
- D. behind

17. Cargo is to truck as passengers is to ____.

- A. bus
- B. warehouse
- C. tunnel
- D. engine

18. Arrival is to departure as entrance is to ____.

- A. door
- B. lobby
- C. exit
- D. gate

19. Traveller is to passport as driver is to ____.

- A. map
- B. licence
- C. seatbelt
- D. tire

20. Itinerary is to trip as recipe is to ____.

- A. kitchen
- B. spoon
- C. oven
- D. meal

21. The bus driver stopped at the red ____ so the children could cross the street.

- A. dinner
- B. story
- C. light
- D. hat

22. Please buckle your seatbelt before the car begins to _____.

- A. sleep
- B. melt
- C. bloom
- D. move

23. The train will _____ from the station at noon, so be on the platform early.

- A. depart
- B. float
- C. bloom
- D. whisper

24. Maya checked the _____ to see which road led to the lake.

- A. soup
- B. map
- C. blanket
- D. ladder

25. The ferry carried cars and people across the wide _____.

- A. desert

- B. hill
- C. lawn
- D. river

26. Our plane had to wait on the runway because of thick ____.

- A. sand
- B. fog
- C. coins
- D. soup

27. The ____ at the airport checked each passport before we boarded.

- A. officer
- B. baker
- C. gardener
- D. painter

28. Because the road was ____ with ice, the driver went very slowly.

- A. sweet
- B. loud
- C. slippery
- D. tiny

29. Dad filled the ____ with gas so we would not run out on the highway.

- A. pillow
- B. kettle
- C. tank
- D. shelf

30. The explorer used a _____ to find north when the sky was cloudy.

- A. spoon
- B. whistle
- C. calendar
- D. compass

31. Heavy traffic left us stuck, so we were _____ for the game.

- A. early
- B. late
- C. ready
- D. first

32. The sailors dropped the _____ to keep their boat from drifting away.

- A. anchor
- B. cushion
- C. umbrella
- D. basket

33. To save money, the family chose to _____ a car instead of buying one.

- A. rent
- B. paint
- C. wrap
- D. sing

34. After the long flight, the passengers felt _____ and went straight to bed.

- A. furious
- B. exhausted
- C. thirsty
- D. crowded

35. The captain _____ the ship carefully into the narrow harbour.

- A. tasted
- B. folded
- C. drew
- D. steered

36. The tourists were _____ by the huge crowds at the busy station, so they asked for directions.

- A. delighted
- B. sleepy
- C. confused
- D. proud

37. Because the _____ was closed for repairs, drivers had to take a _____ route.

- A. bridge, longer
- B. kitchen, longer
- C. bridge, sweeter
- D. kitchen, sweeter

38. The detour added an hour, which was _____ since we were already tired of travelling.

- A. delightful

- B. frustrating
- C. invisible
- D. edible

39. Travellers who plan ahead are usually ____ prepared for surprises than those who do not.

- A. fewer
- B. louder
- C. heavier
- D. better

40. The ____ of camels crossed the desert slowly, carrying goods to the next town.

- A. caravan
- B. recipe
- C. stadium
- D. puddle

41. Which word belongs with: car, bus, truck?

- A. road
- B. tire
- C. van
- D. driver

42. Which word belongs with: east, west, south?

- A. map
- B. compass
- C. north
- D. road

43. Which word belongs with: airplane, helicopter, jet?

- A. sailboat
- B. glider
- C. bicycle
- D. wagon

44. Which word belongs with: ship, canoe, ferry?

- A. truck
- B. jet
- C. scooter
- D. sailboat

45. Which word belongs with: wheel, tire, brake?

- A. horn
- B. pilot
- C. suitcase
- D. runway

46. Which word belongs with: pilot, captain, driver?

- A. luggage
- B. cyclist
- C. highway
- D. ticket

47. Which word belongs with: suitcase, backpack, duffel bag?

- A. passport
- B. compass
- C. helmet
- D. briefcase

48. Which word belongs with: harbour, dock, pier?

- A. runway
- B. garage
- C. marina
- D. tunnel

49. Which word belongs with: highway, street, lane?

- A. harbour
- B. avenue
- C. station
- D. platform

50. Which word belongs with: centimetre, metre, kilometre?

- A. millimetre
- B. kilogram
- C. litre
- D. minute

51. Which word belongs with: rowing, sailing, kayaking?

- A. hiking

- B. skiing
- C. skating
- D. canoeing

52. Which word belongs with: station, airport, depot?

- A. library
- B. bakery
- C. seaport
- D. stadium

53. Which word belongs with: ticket, passport, boarding pass?

- A. suitcase
- B. visa
- C. seat
- D. engine

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

- A. sluggish
- B. gentle
- C. heavy
- D. speedy

55. Which word belongs with: sail, drive, fly?

- A. sleep
- B. wash
- C. ride
- D. cook

56. Which word belongs with: compass, map, globe?

- A. atlas
- B. passport
- C. ticket
- D. suitcase

57. Which word belongs with: tunnel, bridge, overpass?

- A. stoplight
- B. sidewalk
- C. underpass
- D. curb

58. Which word belongs with: sedan, minivan, convertible?

- A. tractor
- B. canoe
- C. scooter
- D. jeep

59. Which word belongs with: anchor, sail, deck?

- A. wing
- B. mast
- C. tire
- D. pedal

60. Two number pairs follow the same rule: $3 : 11$ and $6 : 14$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 18
- B. 30
- C. 16
- D. 80

61. Two number pairs follow the same rule: $15 : 5$ and $27 : 9$. Which number goes with 21 ($21 : ?$) in the same way?

- A. 6
- B. 18
- C. 7
- D. 63

62. Two number pairs follow the same rule: $2 : 8$ and $5 : 20$. Which number goes with 7 ($7 : ?$) in the same way?

- A. 28
- B. 14
- C. 11
- D. 35

63. Two number pairs follow the same rule: $20 : 12$ and $31 : 23$. Which number goes with 45 ($45 : ?$) in the same way?

- A. 53
- B. 37
- C. 36
- D. 15

64. Two number pairs follow the same rule: $4 : 20$ and $8 : 40$. Which number goes with 9 ($9 : ?$) in the same way?

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

65. Two number pairs follow the same rule: $12 : 6$ and $30 : 15$. Which number goes with 18 ($18 : ?$) in the same way?

- A. 6
- B. 36
- C. 9
- D. 8

66. Two number pairs follow the same rule: $5 : 8$ and $12 : 15$. Which number goes with 20 ($20 : ?$) in the same way?

- A. 40
- B. 17
- C. 25
- D. 23

67. Two number pairs follow the same rule: $9 : 3$ and $18 : 6$. Which number goes with 27 ($27 : ?$) in the same way?

- A. 18
- B. 9
- C. 24
- D. 81

68. Two number pairs follow the same rule: $40 : 31$ and $52 : 43$. Which number goes with 60 ($60 : ?$) in the same way?

- A. 51
- B. 69
- C. 50
- D. 20

69. Two number pairs follow the same rule: $2 : 7$ and $4 : 13$. Which number goes with 6 ($6 : ?$) in the same way?

- A. 19
- B. 18
- C. 12
- D. 21

70. Two number pairs follow the same rule: $4 : 11$ and $6 : 15$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 18
- B. 21
- C. 12
- D. 24

71. Two number pairs follow the same rule: $16 : 4$ and $36 : 9$. Which number goes with 44 ($44 : ?$) in the same way?

- A. 40
- B. 22
- C. 11
- D. 33

72. Two number pairs follow the same rule: $25 : 19$ and $40 : 34$. Which number goes with 58 ($58 : ?$) in the same way?

- A. 64
- B. 51
- C. 77
- D. 52

73. Two number pairs follow the same rule: $3 : 18$ and $5 : 30$. Which number goes with 8 ($8 : ?$) in the same way?

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

74. Two number pairs follow the same rule: $10 : 2$ and $25 : 5$. Which number goes with 40 ($40 : ?$) in the same way?

- A. 5
- B. 35
- C. 8
- D. 20

75. Two number pairs follow the same rule: $4 : 9$ and $7 : 15$. Which number goes with 12 ($12 : ?$) in the same way?

- A. 24
- B. 25
- C. 17
- D. 16

76. Two number pairs follow the same rule: $5 : 23$ and $8 : 35$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 43
- B. 40
- C. 33
- D. 47

77. Two number pairs follow the same rule: $4 : 11$ and $6 : 17$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 27
- B. 18
- C. 26
- D. 25

78. Two number pairs follow the same rule: $10 : 4$ and $16 : 7$. Which number goes with 24 ($24 : ?$) in the same way?

- A. 12
- B. 11
- C. 20
- D. 13

79. Two number pairs follow the same rule: $3 : 13$ and $6 : 28$. Which number goes with 8 ($8 : ?$) in the same way?

- A. 38
- B. 40
- C. 30
- D. 33

80. Solve: $18 + ? = 41$. What number goes in the blank?

- A. 59
- B. 22
- C. 24
- D. 23

81. Solve: $? - 14 = 29$. What number goes in the blank?

- A. 43
- B. 15
- C. 42
- D. 44

82. Solve: $9 \times ? = 63$. What number goes in the blank?

- A. 72
- B. 54
- C. 7
- D. 8

83. Solve: $? \div 6 = 8$. What number goes in the blank?

- A. 14
- B. 48
- C. 2
- D. 42

84. Solve: $56 - ? = 19$. What number goes in the blank?

- A. 75
- B. 36
- C. 38
- D. 37

85. Each triangle stands for the same number, and $\text{triangle} + \text{triangle} + \text{triangle} = 27$. What is $\text{triangle} + 4$?

- A. 13
- B. 9
- C. 31
- D. 23

86. Solve: $? + 28 = 15 + 40$. What number goes in the blank?

- A. 55
- B. 43
- C. 83
- D. 27

87. Solve: $54 \div ? = 6$. What number goes in the blank?

- A. 60
- B. 48
- C. 9
- D. 8

88. Which sign makes this true? $37 ? 8 = 29$

- A. plus
- B. minus

- C. times
- D. divided by

89. Solve: $6 \times ? + 4 = 34$. What number goes in the blank?

- A. 30
- B. 6
- C. 4
- D. 5

90. Solve: $4 \times ? - 6 = 30$. What number goes in the blank?

- A. 6
- B. 9
- C. 144
- D. 8

91. Each square stands for the same number, and $\text{square} + \text{square} + 8 = 30$. What is square?

- A. 22
- B. 15
- C. 11
- D. 38

92. Which sign makes this true? $48 ? 6 = 8$

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

93. Solve: $60 \div ? + 7 = 17$. What number goes in the blank?

- A. 10
- B. 5
- C. 8
- D. 6

94. Which sign makes this true? $25 ? 9 = 16$

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

95. Each heart stands for the same number, and $\text{heart} + \text{heart} + \text{heart} = \text{heart} + 14$. What number is heart?

- A. 14
- B. 7
- C. 28
- D. 5

96. Solve: $(? + 9) \times 4 = 52$. What number goes in the blank?

- A. 13
- B. 22
- C. 4
- D. 43

97. Solve: $? \times 6 = 9 \times 8$. What number goes in the blank?

- A. 12
- B. 72
- C. 13
- D. 9

98. Solve: $5 \times ? - 12 = 3 \times 11$. What number goes in the blank?

- A. 45
- B. 9
- C. 7
- D. 11

99. What number comes next? 7, 11, 15, 19, ?

- A. 22
- B. 25
- C. 23
- D. 27

100. What number comes next? 20, 17, 14, 11, ?

- A. 9
- B. 7
- C. 6
- D. 8

101. What number comes next? 2, 9, 16, 23, ?

- A. 29

- B. 31
- C. 30
- D. 37

102. What number comes next? 17, 34, 51, 68, ?

- A. 84
- B. 85
- C. 102
- D. 78

103. What number comes next? 7, 8, 10, 13, 17, ?

- A. 21
- B. 23
- C. 24
- D. 22

104. What number comes next? 4, 6, 10, 16, 24, ?

- A. 34
- B. 32
- C. 30
- D. 36

105. What number comes next? 3, 12, 48, 192, ?

- A. 768
- B. 576
- C. 384
- D. 196

106. What number comes next? 6, 12, 24, 48, ?

- A. 72
- B. 96
- C. 60
- D. 54

107. What number comes next? 480, 240, 120, 60, ?

- A. 15
- B. 40
- C. 30
- D. 20

108. What number comes next? 486, 162, 54, 18, ?

- A. 2
- B. 9
- C. 36
- D. 6

109. What number comes next? 10, 15, 13, 18, 16, ?

- A. 14
- B. 19
- C. 21
- D. 23

110. What number comes next? 8, 18, 14, 24, 20, ?

- A. 30
- B. 16
- C. 24
- D. 28

111. What number comes next? 1, 50, 2, 45, 3, 40, 4, ?

- A. 5
- B. 30
- C. 34
- D. 35

112. What number comes next? 5, 2, 10, 4, 15, 6, 20, ?

- A. 25
- B. 8
- C. 10
- D. 7

113. What number comes next? 8, 9, 11, 15, 23, ?

- A. 31
- B. 37
- C. 39
- D. 43

114. What number comes next? 5, 11, 23, 47, ?

- A. 95

- B. 94
- C. 71
- D. 96

115. What number comes next? 3, 8, 23, 68, ?

- A. 204
- B. 203
- C. 136
- D. 205

116. What number comes next? 4, 6, 10, 18, 34, ?

- A. 68
- B. 64
- C. 50
- D. 66

117. What number comes next? 4, 1, 8, 3, 12, 5, 16, ?

- A. 9
- B. 20
- C. 6
- D. 7

118. What number comes next? 16, 25, 36, 49, 64, ?

- A. 81
- B. 80
- C. 79
- D. 72

119. In a 2 by 2 grid, the top row shows a white triangle, then a white triangle with a dot inside. The bottom row shows a white circle, then a missing figure. Which figure completes the grid?

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

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

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

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

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

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

- A. a large black diamond
- B. a small black diamond

- C. a small white diamond
- D. a small black circle

123. In a 2 by 2 grid, the top row shows a gray triangle, then a gray square. The bottom row shows a gray pentagon, then a missing figure. Which figure completes the grid?

- A. a gray square
- B. a gray circle
- C. a gray octagon
- D. a gray hexagon

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

- A. a small black star below the line
- B. a small black star above the line
- C. a small white star below the line
- D. a small black circle below the line

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

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

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

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

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

- A. four black squares
- B. three white dots
- C. two black squares
- D. three black squares

128. In a 2 by 3 grid, the top row shows a white circle, a circle with its left half black, then a fully black circle. The bottom row shows a white square, a square with its left half black, then a missing figure. Which figure completes the grid?

- A. a white square
- B. a fully black square
- C. a square with its right half black
- D. a fully black circle

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

- A. a white arrow pointing right
- B. a white arrow pointing down
- C. a black arrow pointing right
- D. a white arrow pointing left

130. In a 2 by 3 grid, the top row shows a small star, a medium star, then a large star. The bottom row shows a small heart, a medium heart, then a missing figure. Which figure completes the grid?

- A. a large star
- B. a medium heart
- C. a small heart
- D. a large heart

131. In a 2 by 3 grid, the top row shows a black dot in the top-left corner of a box, then in the top-right corner, then in the bottom-right corner. The bottom row shows a black star in the top-left corner, then in the top-right corner, then a missing figure. Which figure completes the grid?

- A. a black star in the bottom-left corner
- B. a black star in the bottom-right corner
- C. a black star in the top-left corner
- D. a black dot in the bottom-right corner

132. In a 2 by 3 grid, the top row shows a plain white square, a square with one line across it, then a square with two lines across it. The bottom row shows a plain white circle, a circle with one line across it, then a missing figure. Which figure completes the grid?

- A. a circle with three lines across it
- B. a circle with one line across it
- C. a circle with two lines across it
- D. a square with two lines across it

133. In a 3 by 3 grid, the top row shows a circle, a square, and a triangle. The middle row shows a square, a triangle, and a circle. The bottom row shows a triangle, a circle, and a missing figure. Which figure completes the grid?

- A. a circle
- B. a triangle

- C. a square
- D. a diamond

134. In a 3 by 3 grid, the top row shows a white star, a gray star, and a black star. The middle row shows a gray star, a black star, and a white star. The bottom row shows a black star, a white star, and a missing figure. Which figure completes the grid?

- A. a gray star
- B. a white star
- C. a black star
- D. a gray circle

135. In a 3 by 3 grid, the top row shows one dot, two dots, and three dots. The middle row shows two dots, three dots, and four dots. The bottom row shows three dots, four dots, and a missing figure. Which figure completes the grid?

- A. four dots
- B. six dots
- C. seven dots
- D. five dots

136. In a 3 by 3 grid, the top row shows a circle with its left half black, a circle with its right half black, then a fully black circle. The middle row shows the same three steps with squares. The bottom row shows a triangle with its left half black, a triangle with its right half black, and a missing figure. Which figure completes the grid?

- A. a white triangle
- B. a fully black triangle
- C. a triangle with its left half black
- D. a fully black square

137. In a 3 by 3 grid, the top row shows a large white circle, a large white square, and a large white triangle. The middle row shows a medium black circle, a medium black square, and a medium black triangle. The bottom row shows a small white circle, a small white square, and a missing figure. Which figure completes the grid?

- A. a small black triangle
- B. a medium white triangle
- C. a small white circle
- D. a small white triangle

138. In a 3 by 3 grid, the top row shows one white circle, two white circles, and three white circles. The middle row shows one black square, two black squares, and three black squares. The bottom row shows one gray triangle, two gray triangles, and a missing figure. Which figure completes the grid?

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

139. A square sheet of paper is folded in half once. One hole is punched through the folded paper, away from the fold. How many holes will the sheet have when it is unfolded?

- A. two holes
- B. one hole
- C. three holes
- D. four holes

140. A square sheet of paper is folded in half, and then folded in half again. One hole is punched through the folded square, away from every fold. How many holes will there be when the sheet is unfolded?

- A. two holes

- B. four holes
- C. three holes
- D. eight holes

141. A sheet of paper is folded in half once. Two holes are punched through the folded paper, and neither touches the fold. How many holes will there be when the sheet is unfolded?

- A. two holes
- B. three holes
- C. four holes
- D. six holes

142. A long strip of paper is folded like a letter into three equal layers. One hole is punched through all the layers, away from the folds. How many holes will the strip have when it is unfolded?

- A. three holes
- B. two holes
- C. six holes
- D. four holes

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

- A. Two holes, one near each bottom corner
- B. Two holes, one near each top corner
- C. One hole near the top right corner
- D. Two holes, both near the top right corner

144. 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 bottom right corner of the folded shape. Which choice describes the unfolded sheet?

- A. Two holes, one near each left corner
- B. One hole near the bottom right corner
- C. Two holes, one near each bottom corner
- D. Two holes, one near each right corner

145. A square sheet of paper is folded in half by bringing its left edge over to its right edge. One hole is punched near the bottom edge of the folded shape, halfway across it. Which choice describes the unfolded sheet?

- A. Two holes, one near the top edge and one near the bottom edge
- B. Two holes near the bottom edge, both in the right half
- C. Two holes near the bottom edge, one in each half
- D. One hole near the bottom edge, in the middle

146. A square sheet of paper is folded in half by bringing its left edge over to its right edge. One hole is punched with its centre exactly on the folded edge, halfway up. Which choice describes the unfolded sheet?

- A. Two small holes, one on each side of the centre
- B. Two holes, one near each top corner
- C. One hole near the right edge, halfway up
- D. One hole in the centre of the sheet

147. A square sheet of paper is folded along a diagonal so one corner meets the opposite corner, making a triangle. One hole is punched near the triangle's right-angle corner, away from the fold. Which choice describes the unfolded sheet?

- A. Two holes, both near the same corner
- B. Two holes, one near each opposite corner
- C. One hole near the centre of the sheet
- D. Four holes, one near each corner

148. A sheet of paper is folded in half once. Three holes are punched through the folded paper, none touching the fold. How many holes will there be when the sheet is unfolded?

- A. six holes
- B. three holes
- C. four holes
- D. five holes

149. A long strip of paper is folded in half three times, so the folded strip has eight layers. One hole is punched through every layer, away from the folds. How many holes will the strip have when it is unfolded?

- A. four holes
- B. six holes
- C. eight holes
- D. three holes

150. A sheet of paper is folded in half once. One hole is punched in the middle of the folded paper, away from the fold. A second hole is punched with its centre exactly on the fold. How many holes will there be when the sheet is unfolded?

- A. three holes
- B. two holes
- C. four holes
- D. one hole

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

- A. Two holes near the left and right edges, halfway up
- B. Two holes beside the centre line, halfway up

- C. One hole on the centre line, halfway up
- D. Two holes beside the centre line, near the top

152. A long strip of paper is folded like a letter into three equal layers. Then the folded strip is folded in half. One hole is punched through the folded strip, away from every fold. How many holes will the strip have when it is unfolded?

- A. five holes
- B. four holes
- C. three holes
- D. six holes

153. A square sheet of paper is folded in half by bringing its left edge over to its right edge. Then it is folded in half again by bringing its bottom edge up to its top edge. One hole is punched near the top right corner of the small folded square. Which choice describes the unfolded sheet?

- A. Four holes in a line across the middle of the sheet
- B. Four holes, one near each corner of the sheet
- C. Two holes, one near each top corner
- D. One hole near the top right corner of the sheet

154. A square sheet of paper is folded along a diagonal to make a triangle. The triangle is then folded in half again to make a smaller triangle. One hole is punched through the small triangle, away from every fold. How many holes will the sheet have when it is unfolded?

- A. four holes
- B. two holes
- C. three holes
- D. eight holes

155. A square sheet of paper is folded in half by bringing its left edge over to its right edge. Then it is folded in half again by bringing its bottom edge up to its top edge. One hole is punched near the bottom

left corner of the small folded square, where the two folds meet, but not touching either fold. Which choice describes the unfolded sheet?

- A. Four holes, one near each corner of the sheet
- B. One hole in the centre of the sheet
- C. Two holes, one near each side edge
- D. Four holes close together around the centre of the sheet

156. A square sheet of paper is folded in half by bringing its left edge over to its right edge. Then it is folded in half again by bringing its bottom edge up to its top edge. One hole is punched near the bottom right corner of the small folded square, away from both folds. Which choice describes the unfolded sheet?

- A. Two pairs of holes, one pair at the middle of the top and bottom edges
- B. Four separate holes, one near each corner of the sheet
- C. Two pairs of holes, one pair at the middle of each side edge
- D. Four holes grouped tightly around the centre of the sheet

157. A square sheet of paper is folded in half by bringing its bottom edge up to its top edge. Then it is folded in half again by bringing its right edge over to its left edge. One hole is punched near the top right corner of the small folded square, away from both folds. Which choice describes the unfolded sheet?

- A. Two pairs of holes, one pair at the middle of top and bottom edges
- B. Two pairs of holes, one pair at the middle of each side edge
- C. Four separate holes, one near each corner of the whole sheet
- D. Four holes grouped tightly around the centre of the whole sheet

158. Three figures are shown. The first is a small black star. The second is a large black heart. The third is a medium black arrow. Which figure is most like the first three?

- A. a white moon
- B. a striped moon

- C. a gray moon
- D. a black moon

159. Three figures are shown. The first is a square. The second is a long rectangle. The third is a kite. Which figure is most like the first three?

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

160. Three figures are shown. The first is a triangle. The second is a five-pointed star. The third is an arrow. Which figure is most like the first three?

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

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

- A. a star with a dot inside
- B. a star with a dot beside it
- C. a star with a line inside
- D. a star with nothing inside

162. Three figures are shown. The first is three small circles in a row. The second is three small squares in a row. The third is three small triangles in a row. Which figure is most like the first three?

- A. two small stars in a row

- B. three small stars in a row
- C. four small stars in a row
- D. five small stars in a row

163. Three figures are shown. The first is a circle with its left half black. The second is a square with its top half black. The third is a triangle with its bottom half black. Which figure is most like the first three?

- A. a hexagon with one quarter black
- B. a hexagon that is completely black
- C. a hexagon that is completely white
- D. a hexagon with its right half black

164. Three figures are shown. The first is a rocket pointing up. The second is a triangle pointing up. The third is an arrowhead pointing up. Which figure is most like the first three?

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

165. Three figures are shown. The first is a capital letter A. The second is a capital letter M. The third is a capital letter T. Which figure is most like the first three?

- A. the capital letter F
- B. the capital letter R
- C. the capital letter G
- D. the capital letter U

166. Three figures are shown. The first is a closed loop shaped like a circle. The second is a closed loop shaped like a square. The third is a closed loop shaped like a triangle. Which figure is most like the first three?

- A. a closed loop shaped like a star
- B. an open curve shaped like a letter C
- C. a zigzag line with two ends
- D. a straight line with two ends

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

- A. a small white diamond
- B. a large black diamond
- C. a large white diamond
- D. a small black diamond

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

- A. two stars far apart
- B. two stars touching
- C. three stars touching
- D. one big star

169. Three figures are shown. The first is a square with one line across it. The second is a circle with one line across it. The third is a triangle with one line across it. Which figure is most like the first three?

- A. a hexagon with two lines across it
- B. a hexagon with no lines
- C. a hexagon with a dot in the middle
- D. a hexagon with one line across it

170. Three figures are shown. The first is three squares in a row with only the middle one black. The second is three circles in a row with only the middle one black. The third is three triangles in a row with only the middle one black. Which figure is most like the first three?

- A. three stars with only the first one black
- B. three stars with only the middle one black
- C. three stars with only the last one black
- D. three stars that are all black

171. Three figures are shown. The first is a diamond. The second is a kite. The third is a heart. Which figure is most like the first three?

- A. a tall oval
- B. a letter F shape
- C. a lightning bolt
- D. a boot shape

172. Three figures are shown. The first is a triangle with three dots inside. The second is a square with four dots inside. The third is a pentagon with five dots inside. Which figure is most like the first three?

- A. a hexagon with five dots inside
- B. a hexagon with four dots inside
- C. a hexagon with six dots inside
- D. a hexagon with seven dots inside

173. Three figures are shown. The first is three circles stacked, white on top, black in the middle, white on the bottom. The second is three squares stacked in the same shading. The third is three triangles stacked in the same shading. Which figure is most like the first three?

- A. three stars stacked, white, black, white
- B. three stars stacked, black, white, black
- C. three stars stacked, all white
- D. three stars stacked, white, white, black

174. Three figures are shown. The first is three circles in a row that grow from small to large. The second is three squares in a row that grow from small to large. The third is three triangles in a row that grow from small to large. Which figure is most like the first three?

- A. three stars that shrink from large to small
- B. three stars that are all the same size
- C. three stars that grow from small to large
- D. three stars with the largest one in the middle

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

- A. a star beside a star
- B. a circle inside a star
- C. a star on top of a star
- D. a star inside a star

176. Three figures are shown. The first is the capital letter H. The second is the capital letter N. The third is the capital letter Z. Each looks exactly the same when turned upside down. Which figure is most like the first three?

- A. the capital letter E
- B. the capital letter I
- C. the capital letter L
- D. the capital letter R

Practice Exam 8: Answer Key and Explanations

1. D — A car travels on a road, and a boat travels on water. Both pairs name the surface that a vehicle moves along. Sand, mountain, and cloud are not places where a boat can sail, so each one breaks the pattern. Water is the only choice that matches the way road fits car.

- 2. C** — A pilot is the person in charge of flying an airplane, and a captain is the person in charge of steering a ship. Both pairs join a leader with the vehicle that person controls. A bicycle has no captain, a station is a building where people wait, and a tunnel is a passage, so none of them are vehicles.
- 3. B** — A wheel is a part that helps a car move along the ground, and a wing is a part that helps an airplane stay up in the air. Each pair joins a part with its vehicle. A bus, a boat, and a train do not have wings, so none of them fit the pattern.
- 4. A** — Arrive and depart are opposites, because one means getting to a place and the other means leaving it. Come and go are opposites in the same way. Stay, wait, and rest do not mean the reverse of coming. They describe not moving at all, so they do not make an opposite pair like the first one.
- 5. D** — An airport is the place where planes take off, land, and park. A harbour is the place where boats come in and tie up. Both pairs connect a travel place with the vehicles that use it. Trains, cars, and bikes use stations and roads instead, so they do not belong at a harbour.
- 6. C** — A bus drives along a road, and a train rolls along a track. In both pairs the second word names the path the vehicle follows. A train does not travel in the sky or on a river. A bridge is only a small part of some routes, so track is the best match for road.
- 7. B** — A pedal is the part a rider pushes with to move a bicycle, and an oar is the part a rower pulls with to move a boat. Each pair links a moving tool with its vehicle. A bus, a train, and a skateboard are not moved by oars, so they cannot complete the pattern.
- 8. B** — A thermometer measures how hot or cold something is, and a speedometer measures how fast a vehicle is going. Both pairs join a tool with the thing it measures. A speedometer does not show colour, weight, or sound, so those three words do not match the way temperature fits thermometer.
- 9. A** — A helmet is safety gear worn while cycling, and a life jacket is safety gear worn while boating. Both pairs match a piece of protection with the activity that needs it. Reading, baking, and painting are quiet activities that do not put a person in danger of falling or drowning, so they do not fit.
- 10. D** — An engine gives a vehicle the power to go, and a brake gives it the power to stop. Both pairs match a part with its job, and the jobs are opposites. A horn makes honking sounds and a wheel handles steering, but a brake does nothing like that. Shine does not describe a part of any vehicle either.
- 11. C** — A railway is the long, flat path where a train travels, and a runway is the long, flat strip where a plane takes off and lands. Both pairs join a special path with its vehicle. Ships sail in water, while buses and bikes ride on roads, so none of them use a runway.
- 12. A** — A bicycle has two wheels, and the word bicycle even begins with bi, which means two. A tricycle begins with tri, which means three, so it has three wheels. Both pairs match a vehicle with its wheel count. One, four, and six are the wrong numbers, so they break the pattern.
- 13. C** — A garage is the building where a car is kept safe and out of the weather. A hangar is the building where a plane is kept. Both pairs join a vehicle with its building. A harbour is for boats, a platform is where people wait for trains, and a barn is for farm animals, so they do not fit.

14. D — A station is a place where a train stops to let passengers on and off, and a bus stop is a place where a bus does the same thing. Both pairs link a stopping place with its vehicle. Planes, ships, and sleds do not use a bus stop, so they cannot finish the pattern.

15. A — A voyage is a long trip across the ocean, and a flight is a long trip through the sky. Each pair names a kind of trip and the wide space it crosses. A harbour is a place where trips start and end, while roads and tunnels are for ground travel, so none of those fit.

16. B — A tunnel takes travellers under a hill or river, and a bridge takes travellers over a river or valley. Both pairs link a structure with the direction it carries people. Beside, inside, and behind do not describe how a bridge crosses. Over is the only choice that is the opposite of under.

17. A — Cargo means goods, and a truck is built to carry goods from place to place. Passengers are people, and a bus is built to carry people. Both pairs link what is carried with the vehicle that carries it. A warehouse stores things, a tunnel is a passage, and an engine is only a part.

18. C — Arrival means coming in to a place, and departure means going out. Entrance means a way in, and exit means a way out. Both pairs are opposites. A door, a lobby, and a gate can all be part of an entrance or an exit, so they are not the clear reverse of entrance.

19. B — A traveller needs a passport as official permission to cross borders, and a driver needs a licence as official permission to drive. Both pairs link a person with a required document. A map helps find the way, a seatbelt keeps a person safe, and a tire is a car part, so none give permission.

20. D — An itinerary is a plan that lists the steps of a trip, and a recipe is a plan that lists the steps for making a meal. Both pairs join a written plan with what it organizes. A kitchen, a spoon, and an oven are places or tools used while cooking, but they are not what the recipe plans.

21. C — Cars must stop when a traffic light turns red, which gives people time to cross safely. A dinner, a story, and a hat have nothing to do with controlling cars at a street corner. Only light makes sense in this sentence, because it is the signal that tells the bus driver to stop.

22. D — A seatbelt keeps passengers safe while the car is moving, so people buckle up before it starts to move. A car does not sleep, melt, or bloom, because those words describe living things or things that change with heat. Move is the only word that makes sense, and it explains why the seatbelt matters.

23. A — To depart means to leave a place, and a train leaves its station at a set time, which is why passengers must arrive early. A train does not float, bloom, or whisper. Those words describe things on water, flowers, or quiet voices, so only depart fits the idea of a train leaving at noon.

24. B — A map shows roads, towns, and lakes, so it can tell Maya which road to take. Soup is food, a blanket keeps a person warm, and a ladder helps a person climb, so none of these can show a route to a lake. Map is the only word that fits the job of finding a way.

25. D — A ferry is a boat, so it must cross water. A river is wide water that cars and people may need to cross, which makes the sentence sensible. A boat cannot sail across a desert, a hill, or a lawn, because those are dry land. Only river fits the idea of a ferry crossing.

26. B — Thick fog makes it very hard for pilots to see, so planes may wait before taking off. Sand, coins, and soup would not fill the air over a runway in a way that stops planes. Fog is the only choice that is a real weather problem for flying, so it completes the sentence.

27. A — Airport workers called officers or agents look at passports to make sure travellers are allowed to fly. A baker makes bread, a gardener grows plants, and a painter paints pictures, so none of them have a reason to check passports at an airport. Officer is the only word that matches the job described.

28. C — Ice makes a road slippery, so tires can slide and a careful driver slows down. A road that is sweet, loud, or tiny would not be a danger from ice. Those words describe taste, sound, and size, which have nothing to do with slowing a car down. Slippery is the only word that fits the reason.

29. C — A gas tank is the part of a car that holds fuel, so Dad fills it before a long drive. A pillow is for sleeping, a kettle is for boiling water, and a shelf holds books or dishes. None of those can hold gas for a car, so tank is the only word that fits.

30. D — A compass has a magnetic needle that always points north, even when clouds hide the sun and stars. A spoon is for eating, a whistle makes a sound, and a calendar shows dates, so none can show direction. The word compass is the only one that helps an explorer find north in a cloudy sky.

31. B — Heavy traffic that leaves a car stuck makes a trip take longer, so the family would arrive after the start time, which means late. Early and first describe arriving before others, which would not happen when stuck. Ready does not explain the delay, because being stuck keeps people from getting there on time.

32. A — An anchor is a heavy metal weight that sinks to the bottom and holds a boat in place. A cushion, an umbrella, and a basket would float or be blown around, so they cannot stop a boat from drifting. Only anchor makes sense, because sailors drop it into the water on purpose to stay put.

33. A — To rent a car means to pay a company a small fee to use it for a short time, which costs less than buying one. People can paint or wrap a car, but those actions do not save money on getting a car. Singing a car makes no sense. Rent is the only word that matches the plan.

34. B — Exhausted means very tired, and a long flight can make people so tired that they go straight to bed. Furious means angry, and thirsty means wanting a drink, but neither one explains why people would sleep. Crowded describes a place, not a feeling. Exhausted is the only word that gives the reason for bed.

35. D — To steer a ship means to guide it in the direction it should go, which a captain must do very carefully in a narrow harbour. A captain does not taste, fold, or draw a ship as a way of moving it. Only steered tells how the ship got into the harbour safely, so it makes the sentence true.

36. C — Confused means not sure what to do, and a big crowd in a busy station can leave visitors lost, so they ask for help. Delighted and proud are happy feelings that would not lead anyone to ask for directions. Sleepy describes tiredness, not being lost. Only confused explains why the tourists needed directions.

37. A — A bridge carries drivers over water, so when it closes, they must go around and use a longer route. A kitchen is not part of a road, so closing it would not change a driving route. A route cannot be sweeter, because sweet describes taste. Only the pair bridge and longer makes both blanks sensible.

38. B — A detour sends travellers on a longer way, so an extra hour is annoying when people are already tired. That makes frustrating the right word. Delightful would mean happy, which does not match being tired of travelling. Invisible means cannot be seen, and edible means can be eaten, so neither word can describe an extra hour.

39. D — The word than shows a comparison, and prepared needs a word like better to work with it. A person who plans ahead is better prepared for surprises such as delays. Fewer is used for things that can be counted, so fewer prepared makes no sense. Louder and heavier describe sound and weight, not preparation.

40. A — A caravan is a group of travellers or animals that journey together, often across a desert carrying goods. A recipe is a set of cooking steps, a stadium is a large sports building, and a puddle is a small pool of water. None of those can cross a desert, so caravan is the only word that fits.

41. C — Car, bus, and truck are all vehicles that drive on roads and carry people or goods. A van is another road vehicle, so it belongs in the group. A road is the path vehicles use, a tire is only a part of a vehicle, and a driver is a person, so none of those three are vehicles themselves.

42. C — East, west, south, and north are the four main directions on a compass. North completes the set. A map and a compass are tools that show directions, but they are not directions themselves. A road is a path for travel, so it does not name a direction either. Only north belongs with the other three.

43. B — Airplane, helicopter, and jet are all vehicles that fly through the air. A glider is a light aircraft that flies without an engine, so it belongs. A sailboat moves on water, while a bicycle and a wagon roll on the ground, so those three cannot fly and do not belong in a group of air vehicles.

44. D — Ship, canoe, and ferry are all vessels that travel on water. A sailboat is also a water vehicle, so it belongs with them. A truck and a scooter travel on roads, and a jet travels through the air, so none of those three can float or sail, which means they do not match the group.

45. A — Wheel, tire, and brake are all parts of a car or other road vehicle. A horn is another part, used to make a loud warning sound, so it belongs. A pilot is a person, a suitcase is a bag, and a runway is a strip of ground for airplanes, so none of those are parts of a road vehicle.

46. B — Pilot, captain, and driver are all people who control a vehicle as it moves. A cyclist is also a person who controls a vehicle, a bicycle, so cyclist belongs with the group. Luggage is a bag of belongings, a highway is a road, and a ticket is a paper, so none of those are people.

47. D — Suitcase, backpack, and duffel bag are all bags that hold a traveller's belongings. A briefcase is another carrying bag, so it belongs. A passport is a document, a compass shows direction, and a helmet protects the head, so none of those three are made to carry belongings in the way the other bags are.

48. C — Harbour, dock, and pier are all places where boats stop or tie up near the water. A marina is a harbour for small boats, so it belongs with the group. A runway is for airplanes, a garage is for cars, and a tunnel is a passage under ground, so none of those are places for boats.

49. B — Highway, street, and lane are all names for roads that cars use. An avenue is another kind of road, usually wide with trees, so it belongs. A harbour is a place for boats, and a station and a platform are places where trains stop and people wait, so none are roads.

50. A — Centimetre, metre, and kilometre are all units that measure length or distance. A millimetre is a very small unit of length, so it belongs in the group. A kilogram measures weight, a litre measures how much liquid, and a minute measures time, so none of those three measure how long or far something is.

51. D — Rowing, sailing, and kayaking are all ways of moving across water in a boat. Canoeing is also done in a boat on water, so it belongs. Hiking happens on foot, skiing happens on snow, and skating happens on ice, so none of those three involve a boat travelling across water.

52. C — Station, airport, and depot are all places where travellers wait for a train, plane, or bus. A seaport is a place where ships pick up passengers and cargo, so it belongs. A library, a bakery, and a stadium are buildings for books, bread, and sports, so none of them are transport stops.

53. B — Ticket, passport, and boarding pass are all documents travellers must show to be allowed to travel. A visa is an official document that allows a person to enter another country, so it belongs. A suitcase holds belongings, a seat is a place to sit, and an engine is a machine part, so none are travel documents.

54. D — Swift, rapid, and quick are all words that mean moving at a high speed. Speedy has the same meaning, so it belongs with them. Sluggish is the opposite, because it means very slow. Gentle means soft and calm, and heavy describes weight, so neither of those two words can mean fast like the other three do.

55. C — Sail, drive, and fly are all actions people do to travel somewhere in a vehicle. Ride is also a way to travel, such as riding a bike or a bus, so it belongs. Sleep, wash, and cook are things people do at home, and none of them are ways of getting from one place to another.

56. A — Compass, map, and globe are all tools that help travellers find places or directions. An atlas is a book of maps, so it belongs in the same group. A passport and a ticket are documents for permission to travel, and a suitcase is a bag, so none of those three help someone find the way.

57. C — Tunnel, bridge, and overpass are all structures built so that roads or travellers can cross an obstacle. An underpass is a road that passes beneath another road, so it belongs. A stoplight is a signal, a sidewalk is a path beside a road, and a curb is an edge, so none of those cross an obstacle.

58. D — Sedan, minivan, and convertible are all kinds of cars. A jeep is also a kind of car, so it belongs. A tractor is a farm machine, a canoe is a small boat, and a scooter is a small vehicle with two wheels and no body, so none of those three are kinds of car.

59. B — Anchor, sail, and deck are all parts of a ship. A mast is the tall pole that holds up the sails, so it belongs with them. A wing is part of an airplane, a tire is part of a car, and a pedal is part of a bicycle, so none of those three are parts of a ship.

60. A — In $3 : 11$ and $6 : 14$, the second number is 8 more than the first, since 3 plus 8 is 11 and 6 plus 8 is 14. Adding 8 to 10 gives 18. The choice 30 triples the number. The choice 16 adds only 6, and 80 multiplies by 8, so neither follows the rule.

61. C — In $15 : 5$ and $27 : 9$, the second number is one third of the first, since 15 divided by 3 is 5 and 27 divided by 3 is 9. Dividing 21 by 3 gives 7. The choice 6 subtracts 15. The choice 18 subtracts 3, and 63 multiplies by 3, so both break the pattern.

62. A — In $2 : 8$ and $5 : 20$, the second number is 4 times the first, since 2 times 4 is 8 and 5 times 4 is 20. Multiplying 7 by 4 gives 28. The choice 14 only doubles the number, and 11 adds 4. The choice 35 multiplies by 5, so it does not fit either pair.

63. B — In $20 : 12$ and $31 : 23$, the second number is 8 less than the first, since 20 minus 8 is 12 and 31 minus 8 is 23. Taking 8 away from 45 gives 37. The choice 53 adds 8 instead of subtracting it. The choice 36 subtracts 9, and 15 divides by 3, so neither matches both pairs.

64. D — In $4 : 20$ and $8 : 40$, the second number is 5 times the first, since 4 times 5 is 20 and 8 times 5 is 40. Multiplying 9 by 5 gives 45. The choice 36 multiplies by 4, which is too small. The choice 14 adds 5, which fits neither pair, and 54 multiplies by 6.

65. C — In $12 : 6$ and $30 : 15$, the second number is half of the first, since half of 12 is 6 and half of 30 is 15. Half of 18 is 9. The choice 6 subtracts 12, which fails for $30 : 15$. The choice 36 doubles the number, and 8 subtracts 10, so neither fits.

66. D — In $5 : 8$ and $12 : 15$, the second number is 3 more than the first, since 5 plus 3 is 8 and 12 plus 3 is 15. Adding 3 to 20 gives 23. The choice 40 doubles the number, which fails for both pairs. The choice 17 subtracts 3, and 25 adds 5, which fits neither pair.

67. B — In $9 : 3$ and $18 : 6$, the second number is one third of the first, since 9 divided by 3 is 3 and 18 divided by 3 is 6. Dividing 27 by 3 gives 9. The choice 18 subtracts 9, which fails for $18 : 6$. The choice 24 subtracts 3, and 81 multiplies by 3.

68. A — In $40 : 31$ and $52 : 43$, the second number is 9 less than the first, since 40 minus 9 is 31 and 52 minus 9 is 43. Taking 9 from 60 gives 51. The choice 69 adds 9. The choice 50 subtracts 10, which misses both pairs, and 20 divides by 3, which does not fit either.

69. A — The rule has two steps: multiply by 3, then add 1. Check: 2 times 3 is 6, plus 1 is 7, and 4 times 3 is 12, plus 1 is 13. For 6, that gives 19. The choice 18 forgets to add 1. The choice 12 only adds 6, and 21 adds 3.

70. B — The rule has two steps: double the number, then add 3. Check: 4 doubled is 8, plus 3 is 11, and 6 doubled is 12, plus 3 is 15. For 9, doubling gives 18 and adding 3 gives 21. The choice 18 stops after doubling. The choice 12 only adds 3, and 24 adds 6.

71. C — In $16 : 4$ and $36 : 9$, the second number is one fourth of the first, since 16 divided by 4 is 4 and 36 divided by 4 is 9. Dividing 44 by 4 gives 11. The choice 40 subtracts 4. The choice 22 only halves the number, and 33 subtracts 11, so neither works.

72. D — In $25 : 19$ and $40 : 34$, the second number is 6 less than the first, since 25 minus 6 is 19 and 40 minus 6 is 34. Subtracting 6 from 58 gives 52. The choice 64 adds 6. The choice 51 subtracts 7, and 77 adds 19, so neither fits both pairs.

73. D — In $3 : 18$ and $5 : 30$, the second number is 6 times the first, since 3 times 6 is 18 and 5 times 6 is 30. Multiplying 8 by 6 gives 48. The choice 14 adds 6. The choice 40 multiplies by 5, and 54 multiplies by 6 and then adds 6, so neither matches the rule.

74. C — In $10 : 2$ and $25 : 5$, the second number is one fifth of the first, since 10 divided by 5 is 2 and 25 divided by 5 is 5. Dividing 40 by 5 gives 8. The choice 5 subtracts 35. The choice 35 subtracts 5, and 20 divides by 2, so both are different rules.

75. B — The rule has two steps: double the number, then add 1. Check: 4 doubled is 8, plus 1 is 9, and 7 doubled is 14, plus 1 is 15. For 12, doubling gives 24 and adding 1 gives 25. The choice 24 forgets to add 1. Choices 17 and 16 fit no pair.

76. A — The rule has two steps: multiply by 4, then add 3. Check: 5 times 4 is 20, plus 3 is 23, and 8 times 4 is 32, plus 3 is 35. For 10, 40 plus 3 is 43. The choice 40 forgets to add 3. The choice 33 adds 23, and 47 adds 7 after multiplying.

77. C — The rule has two steps: multiply by 3, then subtract 1. Check: 4 times 3 is 12, minus 1 is 11, and 6 times 3 is 18, minus 1 is 17. For 9, tripling gives 27 and subtracting 1 gives 26. The choice 27 forgets to subtract. The choices 18 and 25 fit neither pair.

78. B — The rule has two steps: halve the number, then subtract 1. Check: half of 10 is 5, minus 1 is 4, and half of 16 is 8, minus 1 is 7. For 24, half is 12 and 12 minus 1 is 11. The choice 12 forgets to subtract. Choices 20 and 13 fit neither.

79. A — The rule has two steps: multiply by 5, then subtract 2. Check: 3 times 5 is 15, minus 2 is 13, and 6 times 5 is 30, minus 2 is 28. For 8, 40 minus 2 is 38. The choice 40 forgets to subtract. The choices 30 and 33 each break the pattern in both pairs.

80. D — To find the missing number, subtract: 41 minus 18 equals 23, and 18 plus 23 checks back to 41. The choice 59 comes from adding 18 and 41 instead of subtracting them. The choices 22 and 24 are each one away from the true answer, a common counting slip, and neither one makes the sum equal 41.

81. A — The missing number is the one that leaves 29 after 14 is taken away, so add: 29 plus 14 equals 43, and 43 minus 14 checks back to 29. The choice 15 subtracts 14 from 29 instead of adding. The choices 42 and 44 are off by one, so neither gives 29 after subtracting 14.

82. C — Division undoes multiplication, so 63 divided by 9 gives 7, and 9 times 7 checks back to 63. The choice 72 adds 9 to 63, which is the wrong operation. The choice 54 subtracts 9, also wrong. The choice 8 is tempting because 9 times 8 is 72, but that product is larger than 63, so it fails.

83. B — Multiplication undoes division, so 8 times 6 gives 48, and 48 divided by 6 checks back to 8. The choice 14 adds 6 to 8, and the choice 2 subtracts 6 from 8, so both use the wrong operation. The choice 42 is 6 less than the true answer, and 42 divided by 6 is only 7, not 8.

84. D — The blank is what remains when 19 is taken from 56, so subtract: 56 minus 19 equals 37, and 56 minus 37 checks back to 19. The choice 75 adds 56 and 19 by mistake. The choices 36 and 38 are each one away, so 56 minus 36 gives 20 and 56 minus 38 gives 18, not 19.

85. A — Three equal triangles total 27, so one triangle is 27 divided by 3, which equals 9. The question asks for triangle plus 4, so add 4 to 9 to get 13. The choice 9 is only the value of one triangle. The choice 31 adds 4 to the total of 27, and 23 subtracts 4 from it.

86. D — First add the numbers on the right side, since 15 plus 40 is 55. Then subtract 28 from 55 to find the blank, which gives 27, and 27 plus 28 checks back to 55. The choice 55 is just the sum on the right. The choice 43 subtracts 12, and 83 adds 28 instead of subtracting it.

87. C — Think of what number times 6 makes 54. Since 9 times 6 equals 54, the blank is 9, and 54 divided by 9 checks back to 6. The choice 60 adds 6 to 54, and the choice 48 subtracts 6, so both use the wrong operation. The choice 8 gives 54 divided by 8, which is not a whole number.

88. B — Try each sign. Thirty-seven minus 8 equals 29, so minus makes the statement true. Thirty-seven plus 8 equals 45, thirty-seven times 8 equals 296, and thirty-seven divided by 8 is less than 5, so each of those signs gives an answer far from 29. Only subtraction lands on 29, which makes it the correct sign.

89. D — Work backward in two steps. Subtract 4 from 34 to get 30, which is what 6 times the blank must equal. Then 30 divided by 6 gives 5, so the blank is 5. The choice 30 is only the in-between number from the first step. The choices 6 and 4 give 40 and 28, which miss 34.

90. B — Work backward in two steps. Add 6 to 30 to get 36, which is what 4 times the blank must equal. Then 36 divided by 4 gives 9, and 4 times 9 minus 6 checks back to 30. The choice 6 subtracts 6 instead of adding it. The choice 144 multiplies, and 8 gives only 26.

91. C — Take 8 away from 30 to see what the two squares make together, which is 22. Then split 22 into two equal parts, so one square is 11, and 11 plus 11 plus 8 checks back to 30. The choice 22 is the value of both squares. The choice 15 halves 30, and 38 adds 8 instead.

92. A — Try each sign. Forty-eight divided by 6 equals 8, so divided by makes the statement true. Forty-eight plus 6 equals 54, forty-eight minus 6 equals 42, and forty-eight times 6 equals 288, so those three signs give answers far from 8. Only division brings the answer down to 8, so it is the correct sign.

93. D — Work backward in two steps. Subtract 7 from 17 to get 10, which is what 60 divided by the blank must equal. Then 60 divided by 6 gives 10, so the blank is 6. The choice 10 is the in-between number from the first step. The choices 5 and 8 give 12 and 7.5, which miss 10.

94. A — Try each sign. Twenty-five minus 9 equals 16, so minus makes the statement true. Twenty-five plus 9 equals 34, twenty-five times 9 equals 225, and twenty-five divided by 9 is less than 3, so each of those signs gives an answer far from 16. Only subtraction lands on 16, which makes it the correct sign.

95. B — Three hearts equal one heart plus 14. Take one heart from each side, and two hearts equal 14. So one heart is 14 divided by 2, which is 7, and 7 plus 7 plus 7 equals 21, the same as 7 plus 14. The choice 14 is the value of two hearts, and 28 and 5 do not balance.

96. C — Work backward in two steps. Divide 52 by 4 to get 13, which is what the blank plus 9 must equal. Then subtract 9 from 13 to get 4, and 4 plus 9 times 4 checks back to 52. The choice 13 is the in-between number. The choice 22 adds 9, and 43 subtracts 9 from 52.

97. A — First work out the right side, since 9 times 8 is 72. Then divide 72 by 6 to find the blank, which gives 12, and 12 times 6 checks back to 72. The choice 72 is just the product on the right. The choice 13 gives 78, and the choice 9 gives only 54, so neither one balances the equation.

98. B — First work out the right side, since 3 times 11 is 33. Then add 12 to get 45, which is what 5 times the blank must equal. Dividing 45 by 5 gives 9. The choice 45 is the in-between number. The choice 7 gives 23 and the choice 11 gives 43, so neither equals 33.

99. C — The numbers go up by 4 each time, since 7 plus 4 is 11, 11 plus 4 is 15, and 15 plus 4 is 19. Adding 4 to 19 gives 23. The choice 22 adds only 3, the choice 25 adds 6, and the choice 27 adds 8, so none of them keep the same step of 4.

100. D — The numbers go down by 3 each time, since 20 minus 3 is 17, 17 minus 3 is 14, and 14 minus 3 is 11. Subtracting 3 from 11 gives 8. The choice 9 subtracts only 2, the choice 7 subtracts 4, and the choice 6 subtracts 5, so none of them keep the same step of 3.

101. C — The numbers go up by 7 each time, since 2 plus 7 is 9, 9 plus 7 is 16, and 16 plus 7 is 23. Adding 7 to 23 gives 30. The choice 29 adds only 6, the choice 31 adds 8, and the choice 37 adds 14, so none of them keep the same step of 7.

102. B — The numbers go up by 17 each time, since 17 plus 17 is 34, 34 plus 17 is 51, and 51 plus 17 is 68. Adding 17 to 68 gives 85. The choice 84 adds only 16, the choice 102 adds 34, and the choice 78 adds 10, so none of them keep the same step of 17.

103. D — The gaps grow by one each time: plus 1, plus 2, plus 3, plus 4. The next gap is plus 5, and 17 plus 5 is 22. The choice 21 adds only 4, repeating the last gap. The choice 23 adds 6, which skips ahead a step, and the choice 24 adds 7, so none follow the growing pattern.

104. A — The gaps grow by 2 each time: plus 2, plus 4, plus 6, plus 8. The next gap is plus 10, and 24 plus 10 is 34. The choice 32 adds 8, repeating the last gap. The choice 30 adds 6, going backward in the pattern, and the choice 36 adds 12, which skips a step.

105. A — Each number is 4 times the one before it, since 3 times 4 is 12, 12 times 4 is 48, and 48 times 4 is 192. Multiplying 192 by 4 gives 768. The choice 576 multiplies by 3, the choice 384 only doubles, and the choice 196 adds 4, so none follow the rule of multiplying by 4.

106. B — Each number is double the one before it, since 6 doubled is 12, 12 doubled is 24, and 24 doubled is 48. Doubling 48 gives 96. The choice 72 adds 24, the choice 60 adds 12, and the choice 54 adds 6, so none of them follow the rule of doubling.

107. C — Each number is half of the one before it, since half of 480 is 240, half of 240 is 120, and half of 120 is 60. Half of 60 is 30. The choice 15 halves again, which skips a step. The choice 40 subtracts 20, the choice 20 divides by 3, and neither one follows the rule of halving.

108. D — Each number is one third of the one before it, since 486 divided by 3 is 162, 162 divided by 3 is 54, and 54 divided by 3 is 18. Dividing 18 by 3 gives 6. The choice 2 divides by 9 and the choice 9 halves. The choice 36 doubles the number, so none follow the rule.

109. C — The pattern alternates: plus 5, then minus 2. Starting at 10, we get 15, then 13, then 18, then 16. The last step was minus 2, so the next step is plus 5, and 16 plus 5 is 21. The choice 14 subtracts 2 twice in a row. The choice 19 adds 3 and 23 adds 7, so neither fits.

110. A — The pattern alternates: plus 10, then minus 4. Starting at 8, we get 18, then 14, then 24, then 20. The last step was minus 4, so the next step is plus 10, and 20 plus 10 is 30. The choice 16 subtracts 4 again. The choice 24 adds 4, and 28 adds 8, so neither fits.

111. D — Two patterns are mixed together. The first, third, fifth, and seventh numbers are 1, 2, 3, 4. The others, 50, 45, 40, go down by 5. The next spot belongs to the falling pattern, so 40 minus 5 is 35. The choice 5 belongs to the other pattern, and 30 and 34 miss the step.

112. B — Two patterns are mixed together. The first, third, fifth, and seventh numbers are 5, 10, 15, 20. The others, 2, 4, 6, go up by 2. The next spot belongs to the second pattern, so 6 plus 2 is 8. The choice 25 is the next number in the first pattern, and 10 and 7 break the step.

113. C — The gaps double each time: plus 1, plus 2, plus 4, plus 8. The next gap is plus 16, and 23 plus 16 is 39. The choice 31 adds only 8, repeating the last gap. The choice 37 adds 14, which is not part of the doubling, and the choice 43 adds 20, so none of them match.

114. A — Each number is double the one before it, plus 1. Check: 5 doubled is 10 and plus 1 is 11, and 11 doubled is 22 and plus 1 is 23. For 47, doubling gives 94 and adding 1 gives 95. The choice 94 forgets to add 1. The choice 71 adds 24, and 96 adds 2 instead.

115. B — Each number is triple the one before it, minus 1. Check: 3 tripled is 9 and minus 1 is 8, and 8 tripled is 24 and minus 1 is 23. For 68, tripling gives 204 and subtracting 1 gives 203. The choice 204 forgets to subtract. The choice 136 doubles 68, and 205 adds 1 instead.

116. D — Each number is double the one before it, minus 2. Check: 4 doubled is 8 and minus 2 is 6, and 6 doubled is 12 and minus 2 is 10. For 34, doubling gives 68 and subtracting 2 gives 66. The choice 68 forgets to subtract. The choice 64 subtracts too much, and 50 adds 16.

117. D — Two patterns are mixed together. The first, third, fifth, and seventh numbers are 4, 8, 12, 16. The others, 1, 3, 5, go up by 2. The next spot belongs to the second pattern, so 5 plus 2 is 7. The choice 20 is the next number in the first pattern, and 9 and 6 break the step.

118. A — The gaps grow by 2 each time: plus 9, plus 11, plus 13, plus 15. The next gap is plus 17, and 64 plus 17 is 81. These numbers are also 4 times 4, 5 times 5, and so on, so the next is 9 times 9. The choices 80, 79, and 72 each use the wrong gap.

119. C — In the top row, the triangle stays white and keeps its shape, but a dot appears inside it. The same change applied to the white circle gives a white circle with a dot inside. The plain white circle shows no change. The black circle changes the shade by mistake, and the white square changes the shape instead.

120. B — Across the top row, one small black square becomes two small black squares, so the shape and shade stay the same while the count goes from one to two. Applying that to the small white star gives two small white stars. One star shows no change, two black stars change the shade, and three stars add too many.

121. C — In the top row, the arrow turns a quarter turn clockwise, moving from up to right. Turning the left arrow a quarter turn clockwise makes it point up. The arrow pointing down is a quarter turn the wrong way. The arrow pointing left shows no turn, and the arrow pointing right is a half turn, so those three fail.

122. B — In the top row, the circle keeps its shape and shade but shrinks from large to small. Shrinking the large black diamond the same way gives a small black diamond. The large black diamond shows no change. The small white diamond changes the shade by mistake, and the small black circle changes the shape, so each of those three fails.

123. D — A triangle has 3 sides and a square has 4, so the top row gains one side. A pentagon has 5 sides, and one more side makes 6, which is a hexagon. The square has too few sides, the circle has no straight sides at all, and the octagon has 8 sides, adding three instead of one.

124. A — In the top row, the circle moves from above the line to below it, and nothing else changes. The black star should move below the line the same way and stay small and black. The star above the line shows no move, the white star changes the shade, and the circle below the line changes the shape.

125. C — In the top row, the number of circles doubles from two to four while the shade stays white. Doubling three black squares gives six black squares. Four black squares adds only one, which does not match the doubling. Six white squares changes the shade by mistake, and five black squares adds two, so each of those three fails the rule.

126. A — In the top row, two things change: the square grows from small to large, and its shade swaps from black to white. Applying both changes to the small white circle gives a large black circle. The large white circle changes only the size. The small black circle changes only the shade, and the large black square changes the shape.

127. D — Along the top row, the count grows by one each step: one, two, three. The bottom row follows the same pattern, so after one black square and two black squares comes three black squares. Four black squares skips ahead, and three white dots changes the shape and the shade. Two black squares repeats the middle figure.

128. B — The top row fills in the shape step by step: all white, then the left half black, then all black. The bottom row should do the same with squares, so the last is a fully black square. A white square goes back to the start. The right half black skips the steps, and the black circle changes shape.

129. A — In the top row, the arrow turns a quarter turn clockwise each step: up, right, down. The bottom row does the same, so left becomes up, and up becomes right. The white arrow pointing down is a half turn from up. The black arrow pointing right changes the shade, and the arrow pointing left turns back to the start.

130. D — In the top row, the star grows one step at a time: small, medium, large. The bottom row should follow the same growth, so after the small heart and the medium heart comes a large heart. The large star has the right size but the wrong shape. The medium and small hearts repeat earlier sizes.

131. B — In the top row, the dot moves clockwise around the corners of the box: top-left, top-right, bottom-right. The star should do the same, so after the top-right corner it goes to the bottom-right corner. The bottom-left corner is the next stop after that. The top-left repeats the start, and the dot changes the shape.

132. C — In the top row, one more line is added each step: none, one, then two. The bottom row follows the same count, so the circle should end with two lines across it. Three lines adds too many. A circle with one line repeats the middle figure, and a square with two lines has the right count but changes the shape.

133. C — Each row and each column holds a circle, a square, and a triangle once. The bottom row already has a triangle and a circle, so the missing figure must be a square. The column also has a triangle and a circle above it, so a circle or a triangle would repeat. A diamond never appears in the grid.

134. A — Each row and each column holds a white star, a gray star, and a black star once. The bottom row already has black and white, so the missing figure is gray. A white star or black star would repeat a shade, and a gray circle changes the shape, so those three fail.

135. D — Each row goes up by one dot each step, and each row also starts one dot higher than the row above it. The bottom row begins with three dots and then four, so the next is five. Four dots repeats the middle figure. Six and seven dots go up by two or three.

136. B — In every row, the first two figures show each half in black, and the third figure combines them into a fully black shape. The bottom row uses triangles, so its last figure is a fully black triangle. A white triangle removes all the shading. A half-black triangle repeats a figure, and the black square changes the shape.

137. D — The shape changes across each row: circle, square, triangle. The size and shade stay the same within a row and change down the rows: large white, medium black, small white. So the last figure is a small white triangle. The small black triangle uses the wrong shade, the medium white triangle the wrong size, and the circle the wrong shape.

138. C — Within each row, the count goes up by one: one, two, three. Shape and shade stay the same inside a row. The bottom row has gray triangles, so the last figure is three gray triangles. Two gray

triangles repeats the middle figure. Three white triangles changes the shade, and three gray squares changes the shape.

139. A — Folding the sheet in half makes two layers of paper. A punch goes through both layers, so one punch makes a hole in each layer. When the sheet is opened, there are two holes, one on each side of the crease. One hole ignores the second layer, and three or four holes would need more folds or more punches.

140. B — The first fold makes two layers, and the second fold doubles them to four layers. A single punch through the small folded square goes through all four layers, so there are four holes when the sheet is opened. Two holes would count only one fold. Three holes does not match any doubling, and eight holes would need a third fold.

141. C — Folding once makes two layers, and each punch goes through both layers. So every punch makes two holes when the paper is opened. Two punches therefore make 2 times 2, which is four holes. Two holes would count each punch only once. Three holes does not fit the doubling, and six holes would need three punches or a second fold.

142. A — A letter fold stacks the strip into three layers. One punch goes through every layer, so it makes one hole in each part of the strip. When opened, the strip has three holes, one in each third. Two holes would be right for a fold in half, and four or six holes would need more layers or more punches.

143. B — The folded shape is the right half of the sheet, so the hole sits near the top right corner. Opening the fold mirrors it left to right, adding a second hole near the top left corner. That makes two holes, one near each top corner. Bottom corners use the wrong direction, and the other choices ignore the mirror.

144. D — The folded shape is the bottom half of the sheet, so the hole sits near the bottom right corner. Opening the fold mirrors it top to bottom, adding a hole near the top right corner. That gives two holes down the right side. Left corners use the wrong side, one hole ignores the mirror, and bottom corners mirror wrongly.

145. C — The fold is a vertical line, so the hole is mirrored left to right and stays at the same height. That gives two holes near the bottom edge, one in the left half and one in the right half. Top and bottom holes use the wrong mirror, and the other two choices skip a layer.

146. D — The folded edge is the middle line of the sheet. A hole centred on that edge cuts half a circle in each layer, and the two halves join into one whole hole when opened. It sits in the centre, halfway up. Two small holes need a punch off the fold, and the other places are wrong.

147. B — The right-angle corner of the triangle is where two corners of the square were folded together. Opening the fold mirrors the hole across the diagonal, so there is one hole near each of those two opposite corners. Two holes near the same corner ignore the mirror, one hole in the centre is wrong, and four holes would need another fold.

148. A — Folding once makes two layers, and each punch goes through both layers. Every punch therefore makes two holes when the paper is opened. Three punches make 3 times 2, which is six holes.

Three holes counts each punch only once. Four holes and five holes do not match the doubling of whole punches.

149. C — Each fold in half doubles the layers: two, then four, then eight. One punch goes through all eight layers, so it makes eight holes once the strip is opened. Four holes would be right after only two folds, and three holes counts the folds instead of the layers. Six holes does not match any doubling, so it cannot be correct.

150. A — The first punch goes through two layers, so it makes two holes. The second punch sits on the fold, so it cuts half a circle in each layer, and those halves join into one whole hole. Together that makes three holes. Two holes forgets the fold hole, four counts it twice, and one forgets the first punch.

151. B — The folded edge becomes the centre line of the sheet. A hole close to it is mirrored across that line, giving one hole just right of the centre and one just left, both halfway up. Holes at the edges are too far away, one hole on the line needs a fold punch, and near the top is the wrong height.

152. D — The letter fold makes three layers. Folding that stack in half doubles it to 3 times 2, or six layers. One punch goes through all six layers, so it makes six holes when the strip is opened. Five holes and four holes do not match the layers. Three holes ignores the second fold.

153. B — The small folded square is the top right quarter of the sheet, so its top right corner is the outer corner of the sheet. Each fold mirrors the hole once, left to right and bottom to top, which makes four holes in all. Two holes would use only one fold, and one hole ignores both.

154. A — The first fold makes two layers, and folding the triangle in half doubles them to four. One punch through the small triangle goes through all four layers, so the opened sheet has four holes. Two holes would count only the first fold. Three holes does not match any doubling, and eight holes would need a third fold that never happened.

155. D — The small folded square is the top right quarter, so its bottom left corner is the exact centre of the sheet. A hole just beside that corner is mirrored across both folds, making four holes in a tight group around the centre. Corner holes need an outer-corner punch. One centre hole needs a punch on both folds.

156. C — The folded square is the top right quarter, so its bottom right corner is the middle of the sheet's right edge. Mirroring up and down gives two holes there, and mirroring left to right gives two near the left edge. Top and bottom edges use the wrong corner. Four corner holes and four centre holes come from other corners.

157. A — The folded square is the top left quarter, so its top right corner is the middle of the top edge. Mirroring left to right gives two holes there, and mirroring up and down gives two near the bottom edge. Left and right edges use the wrong corner. Four corner or centre holes come from other corners.

158. D — The three figures have different shapes and different sizes, but all of them are black. So the best match is the one that is also black, which is the black moon. The white moon, the striped moon, and the gray moon each use a different shade, so none share the feature that stays the same.

159. C — The square, the long rectangle, and the kite each have exactly four straight sides. A trapezoid also has four straight sides, so it belongs with them. A triangle has only three sides, and a pentagon has five. A circle has no straight sides at all, so none of those three share the feature that the first three have in common.

160. B — The triangle, the star, and the arrow are all drawn only with straight lines and have no curves at all. A hexagon is also drawn with straight lines only, so it fits. The circle and the oval are drawn with curved lines throughout, and the heart has round curves at its top, so none of those three match.

161. A — Each of the three shapes has a single dot placed inside it, and only the outside shape changes. A star with a dot inside follows that same rule. The star with a dot beside it puts the dot outside. The star with a line inside uses a different mark, and the star with nothing inside has no mark at all.

162. B — Every figure shows exactly three small shapes lined up in a row, and only the kind of shape changes. Three small stars in a row follows that rule. Two stars have too few, and four stars and five stars have too many, so none of those three keep the count of three that the first three figures share.

163. D — Each of the three figures is exactly half black and half white, though the side that is black changes. A hexagon with its right half black is also half and half, so it matches. One quarter black is too little shading. A completely black hexagon and a completely white hexagon have no split at all.

164. C — The rocket, the triangle, and the arrowhead all have their points aimed straight up, and only the kind of figure changes. A pencil pointing up follows that same rule. The pencils pointing down, left, and right are the same shape but face a different direction, so they do not share the upward aim.

165. D — The letters A, M, and T each look the same on the left and right sides, so a mirror line down the middle would match both halves. The letter U also looks the same on both sides, so it fits. The letters F, R, and G have different left and right sides, so none of them share that matching feature.

166. A — All three figures are closed loops with no gaps, so they have an inside and an outside. A closed loop shaped like a star also has no gaps, so it matches. The open C curve, the zigzag line, and the straight line all have two loose ends, so none of them hold an inside and an outside.

167. C — All three figures are large and white, though their shapes differ. Only the large white diamond matches both features. The small white diamond is the wrong size, the large black diamond is the wrong shade, and the small black diamond is wrong in both ways, so each of those fails to match.

168. B — Each figure has exactly two matching shapes that touch each other. Two stars touching follows that rule. Two stars far apart break the touching part, and three stars touching have too many shapes. One big star has only one shape, so each of the other three fails to match the pair-and-touching feature shared by the first three.

169. D — Every one of the three figures has exactly one line drawn across it, and only the outside shape changes. A hexagon with one line across it follows the same rule. Two lines are too many, and no lines are too few. A dot in the middle is a different kind of mark, so those three choices do not match.

170. B — In each figure, the middle shape is black and the outer two are white, and only the kind of shape changes. Three stars with only the middle one black follows that exact pattern. The first and last stars being black put the shading in the wrong spot, and all black stars have no white ones.

171. A — The diamond, the kite, and the heart each look the same on the left and the right, so they are mirror pictures of themselves. A tall oval is also the same on both sides. The letter F, the lightning bolt, and the boot all have a left side that differs from the right, so none share it.

172. C — In each figure, the number of dots matches the number of sides: 3 for the triangle, 4 for the square, and 5 for the pentagon. A hexagon has 6 sides, so six dots follow the rule. Five and four dots are too few, and seven dots is one too many, so none of those three match the sides.

173. A — Every stack goes white, black, white from top to bottom, with only the shape changing. Three stars stacked in white, black, white follow that pattern. Black, white, black reverses the shades. All white has no black, and white, white, black puts the black shape in the wrong place, so none of those three match.

174. C — Every figure grows steadily from the smallest shape on the left to the largest on the right. Stars that grow from small to large follow that rule. Stars that shrink go the other way, and stars that are all one size do not change. The largest star in the middle breaks the steady growth.

175. D — Each figure has a smaller copy of the same shape sitting inside a larger one. A star inside a star follows that rule. A star beside a star and a star on top of a star put the two shapes in the wrong places. A circle inside a star uses a different shape inside, so none of those three match.

176. B — The letters H, N, and Z look the same after a half turn, so turning them upside down changes nothing. The letter I looks the same upside down, so it fits the group. The letters E, L, and R look different when turned upside down, since their parts end up in new places, so they do not share the feature.