

PRACTICE EXAM 13: 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. Cub is to bear as fawn is to ____.

- A. wolf
- B. deer
- C. owl
- D. trout

2. Wing is to eagle as fin is to ____.

- A. fox
- B. owl
- C. salmon
- D. elk

3. Cold is to snow as warm is to ____.

- A. frost
- B. icicle
- C. blizzard
- D. sunshine

4. Glacier is to ice as forest is to ____.

- A. trees
- B. sand
- C. water
- D. gravel

5. Needle is to pine as petal is to ____.

- A. boulder
- B. flower
- C. stream
- D. cabin

6. Fur is to wolf as feather is to ____.

- A. owl
- B. elk
- C. trout
- D. fox

7. Hot is to cold as summer is to ____.

- A. autumn
- B. camping
- C. winter
- D. forest

8. Up is to summit as down is to ____.

- A. peak
- B. ridge
- C. boulder
- D. valley

9. Egg is to eagle as seed is to ____.

- A. boulder
- B. cloud
- C. stream
- D. pine

10. Skier is to slope as swimmer is to ____.

- A. lake
- B. trail
- C. ridge
- D. cabin

11. Axe is to wood as shovel is to ____.

- A. smoke
- B. glass
- C. dirt
- D. wind

12. Roof is to cabin as canopy is to ____.

- A. river

- B. forest
- C. pebble
- D. valley

13. Beaver is to dam as bird is to ____.

- A. seed
- B. pebble
- C. nest
- D. fog

14. Pinecone is to spruce as acorn is to ____.

- A. oak
- B. fern
- C. moss
- D. thistle

15. Map is to hiker as recipe is to ____.

- A. swimmer
- B. cook
- C. trout
- D. canyon

16. Whisper is to shout as trickle is to ____.

- A. drip
- B. mist
- C. puddle
- D. flood

17. Avalanche is to snow as landslide is to ____.

- A. wind
- B. rock
- C. rain
- D. fog

18. Botanist is to plants as geologist is to ____.

- A. stars
- B. animals
- C. weather
- D. rocks

19. Blooming is to spring as hibernating is to ____.

- A. winter
- B. summer
- C. morning
- D. thunder

20. Predator is to prey as hawk is to ____.

- A. falcon
- B. eagle
- C. rabbit
- D. tree

21. Pick the word that fits best: The ____ of the tall pine tree was covered in rough brown bark.

- A. trunk
- B. petal
- C. wing
- D. shell

22. The hikers followed the narrow _____ up the hillside.

- A. ocean
- B. desert
- C. trail
- D. kitchen

23. The campers _____ their tent beside the stream before dark.

- A. floated
- B. chewed
- C. painted
- D. pitched

24. The old oak was so _____ that three children could not reach around its trunk.

- A. thin
- B. huge
- C. short
- D. new

25. The fog was so _____ that we could not see the trail ahead.

- A. bright

- B. thick
- C. loud
- D. sweet

26. The mountain goat grew a heavy coat to stay warm during the ____ winter.

- A. tropical
- B. dusty
- C. sandy
- D. freezing

27. A squirrel buried acorns to eat ____ in winter, when food is hard to find.

- A. later
- B. yesterday
- C. never
- D. loudly

28. Because the creek was too wide to jump, Mia had to ____ it using stepping stones.

- A. bake
- B. borrow
- C. cross
- D. polish

29. The climbers were ____ when they finally reached the summit after six hours.

- A. furious
- B. thrilled
- C. careless
- D. gloomy

30. The ranger warned us to stay on the trail because the cliff edge was ____.

- A. dangerous
- B. harmless
- C. colorful
- D. quiet

31. Moss grows best in ____, shady spots where the ground stays wet.

- A. scorching
- B. dusty
- C. frozen
- D. damp

32. The explorer checked a compass to ____ which way was north.

- A. forget
- B. whisper
- C. determine
- D. spill

33. Rain helps the forest grow ____ and green.

- A. bare
- B. lush
- C. brittle
- D. tiny

34. Bears ____ in dens through winter, living on fat stored from the autumn.

- A. migrate
- B. hunt
- C. bloom
- D. hibernate

35. Dry grass and a strong wind made the wildfire spread _____ through the forest.

- A. slowly
- B. sweetly
- C. rapidly
- D. rarely

36. The _____ of the waterfall was so _____ that we had to shout to hear each other.

- A. roar, loud
- B. whisper, loud
- C. roar, quiet
- D. sparkle, soft

37. Few animals can _____ in the thin, icy air at the very top of the mountain.

- A. sparkle
- B. whistle
- C. survive
- D. borrow

38. The park rangers _____ the injured owl until it was strong enough to fly again.

- A. ignored

- B. scared
- C. trapped
- D. nursed

39. Although the mountain looked ____ from far away, it was really a steep, difficult climb.

- A. dangerous
- B. gentle
- C. rocky
- D. jagged

40. Scientists counted the rings inside the stump to ____ how old the tree was.

- A. estimate
- B. erase
- C. praise
- D. polish

41. Which word belongs with: pine, oak, maple?

- A. boulder
- B. birch
- C. stream
- D. trail

42. Which word belongs with: bear, wolf, fox?

- A. moose
- B. pine
- C. canyon
- D. acorn

43. Which word belongs with: tent, compass, lantern?

- A. canyon
- B. moss
- C. trout
- D. flashlight

44. Which word belongs with: creek, river, brook?

- A. cliff
- B. ridge
- C. stream
- D. meadow

45. Which word belongs with: cliff, ridge, peak?

- A. fern
- B. moss
- C. slope
- D. acorn

46. Which word belongs with: fern, moss, ivy?

- A. spruce
- B. clover
- C. maple
- D. cedar

47. Which word belongs with: hawk, owl, falcon?

- A. eagle
- B. beaver
- C. lynx
- D. salmon

48. Which word belongs with: fog, mist, drizzle?

- A. pebble
- B. acorn
- C. thicket
- D. sleet

49. Which word belongs with: axe, saw, hatchet?

- A. pebble
- B. acorn
- C. chisel
- D. bark

50. Which word belongs with: dawn, noon, dusk?

- A. autumn
- B. glacier
- C. canyon
- D. midnight

51. Which word belongs with: granite, marble, slate?

- A. timber

- B. limestone
- C. cedar
- D. charcoal

52. Which word belongs with: trek, hike, wander?

- A. roam
- B. sleep
- C. bake
- D. pause

53. Which word belongs with: canyon, valley, gorge?

- A. summit
- B. ridge
- C. peak
- D. ravine

54. Which word belongs with: bark, trunk, root?

- A. branch
- B. squirrel
- C. meadow
- D. shade

55. Which word belongs with: gloomy, dim, shadowy?

- A. radiant
- B. sparkling
- C. dusky
- D. glowing

56. Which word belongs with: timid, shy, nervous?

- A. fierce
- B. fearful
- C. bold
- D. cheerful

57. Which word belongs with: hibernate, migrate, forage?

- A. bloom
- B. thaw
- C. erode
- D. burrow

58. Which word belongs with: tremble, shiver, quiver?

- A. march
- B. shudder
- C. gallop
- D. tumble

59. Which word belongs with: predator, scavenger, herbivore?

- A. habitat
- B. seedling
- C. omnivore
- D. shelter

60. Two number pairs follow the same rule: $4 : 13$ and $7 : 16$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 19
- B. 20
- C. 17
- D. 23

61. Two number pairs follow the same rule: $6 : 20$ and $11 : 25$. Which number goes with 23 ($23 : ?$) in the same way?

- A. 37
- B. 38
- C. 46
- D. 29

62. Two number pairs follow the same rule: $31 : 23$ and $45 : 37$. Which number goes with 60 ($60 : ?$) in the same way?

- A. 68
- B. 53
- C. 52
- D. 48

63. Two number pairs follow the same rule: $50 : 33$ and $72 : 55$. Which number goes with 90 ($90 : ?$) in the same way?

- A. 107
- B. 63
- C. 72
- D. 73

64. Two number pairs follow the same rule: $19 : 45$ and $34 : 60$. Which number goes with 48 ($48 : ?$) in the same way?

- A. 22
- B. 74
- C. 84
- D. 73

65. Two number pairs follow the same rule: $3 : 12$ and $7 : 28$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 13
- B. 27
- C. 45
- D. 36

66. Two number pairs follow the same rule: $4 : 24$ and $9 : 54$. Which number goes with 7 ($7 : ?$) in the same way?

- A. 13
- B. 42
- C. 49
- D. 35

67. Two number pairs follow the same rule: $15 : 5$ and $33 : 11$. Which number goes with 48 ($48 : ?$) in the same way?

- A. 16
- B. 45
- C. 24
- D. 12

68. Two number pairs follow the same rule: $20 : 4$ and $55 : 11$. Which number goes with 85 ($85 : ?$) in the same way?

- A. 80
- B. 15
- C. 17
- D. 19

69. Two number pairs follow the same rule: $8 : 56$ and $12 : 84$. Which number goes with 15 ($15 : ?$) in the same way?

- A. 98
- B. 105
- C. 120
- D. 22

70. Two number pairs follow the same rule: $6 : 13$ and $9 : 19$. Which number goes with 14 ($14 : ?$) in the same way?

- A. 28
- B. 30
- C. 42
- D. 29

71. Two number pairs follow the same rule: $7 : 11$ and $10 : 17$. Which number goes with 15 ($15 : ?$) in the same way?

- A. 27
- B. 30
- C. 25
- D. 33

72. Two number pairs follow the same rule: $4 : 10$ and $6 : 16$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 27
- B. 18
- C. 25
- D. 23

73. Two number pairs follow the same rule: $2 : 13$ and $6 : 33$. Which number goes with 8 ($8 : ?$) in the same way?

- A. 40
- B. 43
- C. 45
- D. 48

74. Two number pairs follow the same rule: $37 : 63$ and $58 : 42$. Which number goes with 24 ($24 : ?$) in the same way?

- A. 76
- B. 124
- C. 64
- D. 86

75. Two number pairs follow the same rule: $12 : 11$ and $20 : 15$. Which number goes with 30 ($30 : ?$) in the same way?

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

76. Two number pairs follow the same rule: $6 : 36$ and $9 : 81$. Which number goes with 12 ($12 : ?$) in the same way?

- A. 24
- B. 120
- C. 132
- D. 144

77. Two number pairs follow the same rule: $5 : 19$ and $9 : 31$. Which number goes with 14 ($14 : ?$) in the same way?

- A. 42
- B. 49
- C. 46
- D. 52

78. Two number pairs follow the same rule: $16 : 10$ and $40 : 16$. Which number goes with 64 ($64 : ?$) in the same way?

- A. 16
- B. 22
- C. 26
- D. 38

79. Two number pairs follow the same rule: $3 : 22$ and $8 : 67$. Which number goes with 6 ($6 : ?$) in the same way?

- A. 49
- B. 54
- C. 59
- D. 44

80. Solve: $38 + ? = 91$. What number goes in the blank?

- A. 129
- B. 63
- C. 54
- D. 53

81. Solve: $? - 27 = 48$. What number goes in the blank?

- A. 21
- B. 85
- C. 74
- D. 75

82. Solve: $9 \times ? = 117$. What number goes in the blank?

- A. 12
- B. 13
- C. 126
- D. 14

83. Solve: $? \div 9 = 14$. What number goes in the blank?

- A. 23
- B. 117
- C. 126
- D. 135

84. Solve: $144 \div ? = 9$. What number goes in the blank?

- A. 16
- B. 15
- C. 17
- D. 153

85. Solve: $96 - ? = 39$. What number goes in the blank?

- A. 57
- B. 135
- C. 56
- D. 67

86. Which sign makes this true? $8 ? 15 = 120$

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

87. Solve: $? \times 5 - 6 = 49$. What number goes in the blank?

- A. 10
- B. 12
- C. 55
- D. 11

88. Solve: $? + 17 = 6 \times 9$. What number goes in the blank?

- A. 71
- B. 36
- C. 37

D. 47

89. Each ? stands for the same number: $? + ? + ? = 63$. What is the number?

A. 20

B. 21

C. 22

D. 60

90. Solve: $? \div 5 + 12 = 31$. What number goes in the blank?

A. 95

B. 19

C. 215

D. 85

91. Which sign makes this true? $56 ? 7 = 8$

A. plus

B. minus

C. divided by

D. times

92. Each ? stands for the same number: $? \times ? = 169$. What is the number?

A. 12

B. 14

C. 84

D. 13

93. Solve: $? \times 6 + 15 = 87$. What number goes in the blank?

- A. 17
- B. 14
- C. 72
- D. 12

94. Solve: $3 \times ? - 14 = 40$. What number goes in the blank?

- A. 8
- B. 26
- C. 18
- D. 22

95. Which sign makes this true? $24 ? 6 = 18$

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

96. Each ? stands for the same number: $? \times ? + ? = 72$. What is the number?

- A. 8
- B. 9
- C. 7
- D. 36

97. Solve: $? \div 8 - 5 = 9$. What number goes in the blank?

- A. 14
- B. 77
- C. 112
- D. 120

98. Solve: $7 \times ? + 8 = 78$. What number goes in the blank?

- A. 10
- B. 12
- C. 9
- D. 70

99. What number comes next? 16, 25, 34, 43, ?

- A. 51
- B. 53
- C. 61
- D. 52

100. What number comes next? 84, 77, 70, 63, ?

- A. 49
- B. 56
- C. 57
- D. 60

101. What number comes next? 6, 19, 32, 45, ?

- A. 58
- B. 57
- C. 64

D. 52

102. What number comes next? 130, 118, 106, 94, ?

A. 80

B. 82

C. 84

D. 94

103. What number comes next? 23, 31, 39, 47, ?

A. 54

B. 56

C. 63

D. 55

104. What number comes next? 17, 18, 20, 23, 27, ?

A. 31

B. 33

C. 32

D. 36

105. What number comes next? 1, 2, 4, 7, 11, 16, ?

A. 21

B. 22

C. 23

D. 27

106. What number comes next? 30, 28, 25, 21, ?

- A. 16
- B. 15
- C. 17
- D. 18

107. What number comes next? 4, 5, 8, 13, 20, ?

- A. 28
- B. 27
- C. 29
- D. 30

108. What number comes next? 3, 18, 108, 648, ?

- A. 1296
- B. 2592
- C. 3240
- D. 3888

109. What number comes next? 2, 14, 98, 686, ?

- A. 1372
- B. 2744
- C. 4802
- D. 4200

110. What number comes next? 6250, 1250, 250, 50, ?

- A. 25
- B. 10
- C. 5
- D. 40

111. What number comes next? 40, 45, 41, 46, 42, 47, ?

- A. 48
- B. 44
- C. 52
- D. 43

112. What number comes next? 12, 9, 18, 15, 30, 27, ?

- A. 54
- B. 24
- C. 57
- D. 36

113. What number comes next? 7, 14, 11, 22, 19, 38, ?

- A. 41
- B. 35
- C. 76
- D. 30

114. What number comes next? 5, 20, 8, 17, 11, 14, ?

- A. 11
- B. 17
- C. 8

D. 14

115. What number comes next? 1, 60, 3, 52, 5, 44, 7, ?

A. 28

B. 9

C. 36

D. 40

116. What number comes next? 8, 17, 35, 71, ?

A. 143

B. 142

C. 144

D. 107

117. What number comes next? 4, 14, 44, 134, ?

A. 402

B. 268

C. 404

D. 410

118. What number comes next? 5, 8, 14, 26, ?

A. 50

B. 52

C. 44

D. 38

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

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

120. In a 2 by 2 grid, the top row shows one small black triangle, then two small black triangles. 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 black stars
- C. three small white stars
- D. two small white stars

121. In a 2 by 2 grid, the top row shows a white square with a black dot inside, then an empty white square. The bottom row shows a white circle with a black dot inside, then a missing figure. Which figure completes the grid?

- A. a white circle with a black dot
- B. an empty white circle
- C. an empty black circle
- D. an empty white square

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

- A. a black triangle
- B. a white pentagon
- C. a black hexagon

D. a black pentagon

123. In a 2 by 3 grid, the top row shows one black dot, two black dots, then three 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 white squares
- B. three black dots
- C. two small white squares
- D. four small white squares

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

- A. a white square above a black square
- B. a black circle above a white circle
- C. a black square above a white square
- D. two black squares stacked

125. In a 2 by 2 grid, the top row shows a triangle on the left of a tall line, then a triangle on the right of the tall line. The bottom row shows a white circle on the left of a tall line, then a missing figure. Which figure completes the grid?

- A. a white circle on the right of the tall line
- B. a white circle on the left of the tall line
- C. a black circle on the right of the tall line
- D. a white circle above the tall line

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

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

127. In a 2 by 2 grid, the top row shows a large circle holding a small square, then a large square holding a small circle. The bottom row shows a large triangle holding a small star, then a missing figure. Which figure completes the grid?

- A. a large triangle holding a small star
- B. a large star holding a small circle
- C. a large star holding a small triangle
- D. a large triangle holding a small triangle

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

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

129. In a 2 by 3 grid, the top row shows a horizontal line, a vertical line, then a plus sign. The bottom row shows a slanted line rising to the right, a slanted line falling to the right, then a missing figure. Which figure completes the grid?

- A. a plus sign made of two straight lines
- B. one slanted line rising to the right
- C. a triangle made of three slanted lines
- D. an X made of two slanted lines

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

- A. a white hexagon
- B. a white square
- C. a white octagon
- D. a black hexagon

131. In a 2 by 3 grid, the top row shows a white square with a black dot in its top-left corner, then its top-right corner, then its bottom-right corner. The bottom row shows a black circle with a white dot in its top-left corner, then its top-right corner, then a missing figure. Which figure completes the grid?

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

132. In a 2 by 3 grid, the top row shows one small white circle, two small grey circles, then three small black circles. The bottom row shows one large white triangle, two large grey triangles, then a missing figure. Which figure completes the grid?

- A. three large grey triangles
- B. three small black triangles
- C. three large black triangles
- D. two large black triangles

133. In a 3 by 3 grid, each row has two black shapes and one white shape. Row 1: a white triangle, a black triangle, a black triangle. Row 2: a black square, a white square, a black square. Row 3: a black circle, a black circle, then a missing figure. Which figure completes the grid?

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

134. In a 3 by 3 grid, Row 1 shows a white star, a grey star, then a black star. Row 2 shows a grey heart, a black heart, then a white heart. Row 3 shows a black cross, a white cross, then a missing figure. Which figure completes the grid?

- A. a black cross
- B. a grey star
- C. a white cross
- D. a grey cross

135. In a 3 by 3 grid, Row 1 shows a small white circle, a medium white circle, then a large white circle. Row 2 shows a small black square, a medium black square, then a large black square. Row 3 shows a small grey triangle, a medium grey triangle, then a missing figure. Which figure completes the grid?

- A. a large grey triangle
- B. a large white triangle
- C. a medium grey triangle
- D. a large grey square

136. In a 3 by 3 grid, the number of dots in the third figure of each row equals the first two figures added together. Row 1: one black dot, two black dots, three black dots. Row 2: two black dots, two black dots, four black dots. Row 3: three black dots, one black dot, then a missing figure. Which figure completes the grid?

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

137. In a 3 by 3 grid, Row 1 shows an arrow pointing up, an arrow pointing right, then an arrow pointing down. Row 2 shows an arrow pointing right, an arrow pointing down, then an arrow pointing left. Row 3 shows an arrow pointing down, an arrow pointing left, then a missing figure. Which figure completes the grid?

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

138. In a 3 by 3 grid, Row 1 shows a white circle, a grey square, then a black triangle. Row 2 shows a grey square, a black triangle, then a white circle. Row 3 shows a black triangle, a white circle, then a missing figure. Which figure completes the grid?

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

139. A square sheet is folded in half once. One hole is punched through both layers, away from the fold. How many holes does the unfolded sheet have?

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

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

- A. 3 holes
- B. 5 holes

- C. 9 holes
- D. 6 holes

141. A sheet is folded in half, then in half again, making four layers. Three holes are punched through all the layers, away from the folds. How many holes does the unfolded sheet have?

- A. 7 holes
- B. 8 holes
- C. 16 holes
- D. 12 holes

142. A square sheet is folded in half. One hole is punched near the folded edge, and a second hole is punched near the open edges, both through two layers, away from the creases. How many holes does the unfolded sheet have?

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

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

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

144. A square sheet is folded in half by bringing the bottom edge up to the top edge. One hole is punched near the folded edge, halfway across it. Which choice describes the unfolded sheet?

- A. Two holes side by side, just left and right of the center
- B. Two holes, one just above and one just below the center
- C. Two holes one above the other, near the top and bottom edges
- D. One single hole at the exact center of the sheet

145. A square sheet is folded in half by bringing the left edge over to the right edge. One hole is punched near the open right edge, halfway up. Which choice describes the unfolded sheet?

- A. Two holes close together at the center, halfway up
- B. Two holes near the top, one near each side edge
- C. One hole near the right edge, halfway up
- D. Two holes, one near each side edge, halfway up

146. A long strip is folded in thirds, like a letter. One hole is punched through the middle of the three layers. Which choice describes the unfolded strip?

- A. Three holes, bunched near the middle of the strip
- B. Three holes, evenly spaced along the strip
- C. One hole in the middle of the strip
- D. Two holes, one in each end third of the strip

147. A long strip is folded back and forth like a paper fan into four equal sections. One hole is punched through the middle of the folded stack. Which choice describes the unfolded strip?

- A. Four holes, evenly spaced along the strip
- B. Four holes, bunched together in the middle
- C. Three holes, evenly spaced along the strip
- D. Two holes, one at each end of the strip

148. A square sheet is folded in half by bringing the top edge down to the bottom edge. One hole is punched near the bottom-left corner of the folded sheet, away from the creases. Which choice describes the unfolded sheet?

- A. Two holes, near the top-left and top-right corners
- B. Four holes, one near each corner of the sheet
- C. Two holes, near the top-left and bottom-left corners
- D. Two holes close together, one above the other, near the center

149. A square sheet is folded in half along its diagonal to make a triangle. One hole is punched near the right-angle corner of the triangle, away from the creases. Which choice describes the unfolded sheet?

- A. Two holes, near two neighboring corners of the sheet
- B. Four holes, one near each corner of the sheet
- C. Two holes, near two opposite corners of the sheet
- D. Two holes close together at the center of the sheet

150. A square sheet is folded in half along its diagonal to make a triangle. One hole is punched close to the middle of the folded diagonal edge, a little way inside the triangle. Which choice describes the unfolded sheet?

- A. Two holes, near two opposite corners of the sheet
- B. Four holes, in a small square around the center
- C. Two holes, near the middle of two opposite sides
- D. Two holes, close together near the center of the sheet

151. A square sheet is folded in half by bringing the left edge over to the right edge, then in half again by bringing the bottom edge up to the top edge. One hole is punched near the top-right corner of the small square, away from the creases. Which choice describes the unfolded sheet?

- A. Four holes, in a small square around the center
- B. Four holes, one near each corner of the sheet
- C. Two holes, near the two top corners of the sheet
- D. One hole, near the top-right corner of the sheet

152. A square sheet is folded in half by bringing the left edge over to the right edge, then in half again by bringing the bottom edge up to the top edge. One hole is punched in the middle of the small square, away from the creases. Which choice describes the unfolded sheet?

- A. Four holes, one in the middle of each quarter
- B. Four holes, one near each corner of the sheet
- C. Four holes, in a small square around the center
- D. Four holes, in a straight row across the middle

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. One hole is punched near the corner where the two folded edges meet, away from the creases. Which choice describes the unfolded sheet?

- A. Four holes, in a small square around the center
- B. Four holes, one near each corner of the sheet
- C. Two holes, side by side near the center
- D. One hole at the exact center of the sheet

154. A square sheet is folded in half by bringing the left edge over to the right edge. One hole is punched near the folded edge, close to the top. A second hole is punched near the open edge, close to the bottom. Which choice describes the unfolded sheet?

- A. Two holes near the side edges at the top, two near the center at the bottom
- B. Four holes in a straight row across the middle of the whole sheet
- C. Four holes, one near each corner of the sheet, two high and two low
- D. Two holes near the center at the top, two near the side edges at the bottom

155. A long strip of paper is folded in half, then in half again, then in half a third time, making eight layers. Two holes are punched through all layers, away from the creases. How many holes does the unfolded strip have?

- A. 8 holes

- B. 16 holes
- C. 10 holes
- D. 12 holes

156. A square sheet is folded in half by bringing the left edge over to the right edge, then in half again by bringing the bottom edge up to the top edge. One hole is punched near the top-right corner of the small square, and another near its bottom-left corner. Which choice describes the unfolded sheet?

- A. Eight holes in a row across the middle of the sheet
- B. Four holes near the corners of the sheet and two near its center
- C. Four holes near the corners of the sheet and four holes around its center
- D. Eight holes close together near the center of the sheet

157. A sheet is folded in half and one hole is punched through both layers. Without unfolding, it is folded in half again and one more hole is punched through all four layers, away from the first hole and the creases. How many holes does the unfolded sheet have?

- A. 8 holes
- B. 6 holes
- C. 4 holes
- D. 5 holes

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

- A. a huge black circle
- B. a huge white circle
- C. a huge black square
- D. a huge grey circle

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

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

160. Three figures are shown. The first is two small stars. The second is two large circles. The third is two black squares. Which figure is most like the first three?

- A. one white triangle
- B. three white triangles
- C. four white triangles
- D. two white triangles

161. Three figures are shown. The first is three circles nested one inside another. The second is three squares nested one inside another. The third is three triangles nested one inside another. Which figure is most like the first three?

- A. three stars nested one inside another
- B. two stars nested one inside another
- C. four stars nested one inside another
- D. three stars side by side, not nested

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

- A. a white star with no dot at all
- B. a white star with a black dot inside
- C. a black star with a black dot inside
- D. a white star with a black dot outside

163. Three figures are shown. The first is a circle with a straight line tail. The second is a square with a straight line tail. The third is a triangle with a straight line tail. Which figure is most like the first three?

- A. a star with no tail
- B. a star with two straight tails
- C. a star with one curved tail
- D. a star with one straight tail

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

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

165. Three figures are shown. The first is a circle cut into two equal halves. The second is a square cut into two equal halves. The third is a triangle cut into two equal parts. Which figure is most like the first three?

- A. a star cut into three equal parts
- B. a star cut into two equal parts
- C. a star with no cuts
- D. a star cut into four equal parts

166. Three figures are shown. The first is a row of four circles: black, white, black, white. The second is a row of four squares: black, white, black, white. The third is a row of four triangles: black, white, black, white. Which figure is most like the first three?

- A. a row of four stars: black, black, white, white
- B. a row of four stars: white, black, white, black

- C. a row of three stars: black, white, black
- D. a row of four stars: black, white, black, white

167. Three figures are shown. The first is a long arrow pointing up. The second is a tent shape pointing up. The third is a rocket pointing up. Which figure is most like the first three?

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

168. Three figures are shown. The first is a circle with its left half black and its right half white. The second is a square with its left half black and its right half white. The third is a triangle with its left half black and its right half white. Which figure is most like the first three?

- A. a star with its left half black and its right half white
- B. a star with its right half black and its left half white
- C. a star with its top half black and its bottom half white
- D. a star with every part of it colored black

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

- A. two stars side by side, not touching
- B. two stars, one inside the other
- C. three stars that overlap each other
- D. two stars that overlap each other

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

- A. a large star beside a small star
- B. a small star beside a small star
- C. a large star beside a small circle
- D. a large star beside a large star

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

- A. a large diamond with a small circle on top
- B. a large diamond with a small diamond on top
- C. a large diamond with a small diamond below
- D. a small diamond with a large diamond on top

172. Three figures are shown. The first is a big white square holding two black dots. The second is a big grey circle holding two black dots. The third is a big white triangle holding two black dots. Which figure is most like the first three?

- A. a big grey star holding three black dots
- B. a big grey star holding two white dots
- C. a big grey star holding two black dots
- D. a big grey star with two black dots outside

173. Three figures are shown. The first is a small square. The second is a wide rectangle. The third is a tilted square. Which figure is most like the first three?

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

174. Three figures are shown. The first is a circle. The second is an oval. The third is a ring. Which figure is most like the first three?

- A. a rectangle with square corners
- B. a star with five sharp points
- C. a triangle with three corners
- D. a smooth egg shape with no corners

175. Three figures are shown. The first is a half circle. The second is a pie slice. The third is an arch, which is a rectangle with a curved top. Which figure is most like the first three?

- A. a full circle
- B. a square
- C. a quarter circle
- D. a triangle

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

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

Practice Exam 13: Answer Key and Explanations

1. B — A cub is a young bear, and a fawn is a young deer. Both pairs name a baby animal and its parent kind. The wolf, owl, and trout are other forest animals, but a fawn is not a young wolf, a young owl, or a young trout, so the young-to-adult link fails for each of them.

2. C — An eagle uses its wing to move through the air, and a salmon uses its fin to move through water. Each pair matches a body part with the animal that depends on it. A fox and an elk walk on legs, and an owl has wings, so none of them travels with a fin.

3. D — Snow is a cold kind of weather, and sunshine is a warm kind of weather. Each pair links a temperature feeling with something that brings it. Frost, icicle, and blizzard are all made by freezing temperatures, so they match cold instead. Sunshine is the only choice that warms a forest clearing like snow chills it.

4. A — A glacier is a huge mass made of ice, and a forest is a large area made of trees. Each pair names a place and the main material it is built from. Sand, water, and gravel may be found near a forest, but none of them is what a forest is made of.

5. B — A needle is a thin leaf that grows on a pine, and a petal is a soft part that grows on a flower. Each pair names a part and the plant it belongs to. A boulder, a stream, and a cabin are never plant parts, so a petal cannot belong to any of them.

6. A — Fur covers the body of a wolf, and feathers cover the body of an owl. Each pair links a kind of body covering with the animal that wears it. An elk and a fox are covered in fur, not feathers, and a trout is covered in scales, so none of them has feathers like an owl.

7. C — Hot and cold are opposites, and summer and winter are the opposite seasons of the year. Autumn is a cool season but sits between summer and winter, so it is not the true opposite. Camping and forest are not seasons at all, so only winter completes the opposite pair. Winter alone fits.

8. D — A hiker goes up to reach a summit, and a hiker goes down to reach a valley. Each pair links a direction with the place it leads to. A peak and a ridge are high places like the summit, so they point up instead of down. A boulder is a rock, not a low place.

9. D — An egg grows and hatches into an eagle, and a seed grows into a pine. Each pair shows a living thing at its earliest stage and what it becomes. A boulder, a cloud, and a stream do not start as seeds, so none of them is what a seed grows into.

10. A — A skier glides down a snowy slope, and a swimmer moves through a lake. Each pair links a person with the place where that activity happens. A trail is for walking, a ridge is a high edge of land, and a cabin is a building, so none of those places is used for swimming.

11. C — An axe is a tool that cuts into wood, and a shovel is a tool that digs into dirt. Each pair links a tool with the material it works on. Smoke and wind cannot be dug up, and glass would shatter under a shovel, so none of them is the material a shovel is made to move.

12. B — A roof forms the covering at the top of a cabin, and the canopy forms the leafy covering at the top of a forest. Each pair names a top layer and the whole it covers. A river and a pebble have no leafy top layer, and a valley is a low land shape, not a covered place.

- 13. C** — A beaver builds a dam from sticks and mud, and a bird builds a nest from twigs and grass. Each pair links an animal with the home or structure it makes. A bird may eat a seed or pick up a pebble, but it does not build either one, and it cannot build fog.
- 14. A** — A pinecone holds the seeds that grow into a spruce, and an acorn is the seed that grows into an oak. Each pair links a seed-bearing part with the tree it starts. Fern, moss, and thistle are small plants that do not grow from acorns, so none of them can be what an acorn becomes.
- 15. B** — A hiker uses a map to find the way, and a cook uses a recipe to know how to make a meal. Each pair links a set of instructions with the person who follows them. A swimmer, a trout, and a canyon do not follow recipes, so none of them fits the pattern the way a cook does.
- 16. D** — A whisper is a very quiet sound and a shout is a very loud one, so they are opposites in strength. A trickle is a tiny flow of water, and a flood is a huge flow. A drip is as small as a trickle, and a mist and a puddle are not large flows.
- 17. B** — An avalanche is a mass of snow sliding down a mountainside, and a landslide is a mass of rock and earth sliding down a hillside. Each pair names a downhill slide and what it carries. Wind, rain, and fog are weather that cannot slide down a slope, so they fail the pattern.
- 18. D** — A botanist is a scientist who studies plants, and a geologist is a scientist who studies rocks and the earth. Each pair links a kind of scientist with the subject studied. Stars, animals, and weather belong to astronomers, zoologists, and meteorologists, so those scientists, not geologists, study them. Only rocks fit a geologist.
- 19. A** — Many flowers bloom in spring, and bears hibernate during winter. Each pair links an activity with the season when it usually happens. Summer is warm and bears are active then, so it does not fit. Morning and thunder are not seasons, so winter is the only choice that matches how spring matches blooming.
- 20. C** — A predator hunts prey, and a hawk hunts a rabbit, so each pair shows hunter and hunted. A falcon and an eagle are also hunting birds, so they are hunters, not the hunted. A hawk may land on a tree, but it does not hunt a tree, so only rabbit completes the pair.
- 21. A** — The sentence describes the thick main stem of a tree covered in rough bark, and that part is called the trunk. A petal belongs to a flower, a wing belongs to a bird or insect, and a shell belongs to a turtle or snail, so none of those words can be covered in bark.
- 22. C** — A trail is a narrow path that hikers follow, so it fits the hillside setting. An ocean is a huge body of water, and a desert is a large dry region, so neither one is narrow and can be followed up a hill. A kitchen is a room inside a house, which does not fit.
- 23. D** — To pitch a tent means to set it up, which is what campers do before night falls. Floated, chewed, and painted do not describe setting up a tent. Campers might float on a stream, chew food, or paint a picture, but none of those actions prepares a place to sleep.

- 24. B** — A trunk that three children cannot reach around must be very wide, so huge is the best fit. Thin and short would mean one child could easily hug the trunk. New does not work either, because a young tree would usually have a slim trunk that is easy to circle with arms.
- 25. B** — Fog that hides a trail from view must be dense, and thick describes dense fog well. Bright fog would help us see, so it contradicts the sentence. Loud describes a sound and sweet describes a taste, and fog has neither, so only thick explains why the trail disappeared from sight.
- 26. D** — A heavy coat is needed to stay warm in very low temperatures, so freezing fits the winter described. Tropical means hot and wet, so no thick coat would be needed. Dusty and sandy describe ground conditions in dry places, and neither explains why a goat would need extra warmth. Only freezing fits.
- 27. A** — The squirrel hides acorns now so it can eat them in the future, during the winter, so later is the best fit. Yesterday points to the past, which does not match saving food for winter. Never would mean the acorns are not eaten, and loudly does not describe when something is eaten.
- 28. C** — Mia could not jump over the creek, so she used stepping stones to get to the other side, which means she had to cross it. Baking, borrowing, and polishing cannot be done to a creek with stones. Only cross describes moving from one bank to the other. The other verbs do not fit.
- 29. B** — Reaching the top after six hours of hard effort would make climbers feel proud and excited, so thrilled fits. Furious and gloomy are unhappy feelings that do not suit a goal reached. Careless describes how someone acts, not how they feel, and it does not explain a reaction to success.
- 30. A** — A warning to stay on the trail makes sense only if the cliff edge could hurt someone, so dangerous is the best fit. Harmless would give no reason for a warning. Colorful and quiet describe how a place looks or sounds, and neither explains why a ranger would warn hikers away from it.
- 31. D** — Moss needs moisture, and the sentence says the spots are shady and the ground stays wet, so damp fits. Scorching means extremely hot, which would dry the moss out. Dusty ground is dry, and frozen ground would stop moss from growing, so each of those choices contradicts the wet, shady setting.
- 32. C** — A compass is a tool for finding direction, so checking it helps the explorer determine, meaning figure out, which way is north. Forget, whisper, and spill make no sense with the idea of looking at a compass. Only determine matches the purpose of the tool described in the sentence. The other verbs fail.
- 33. B** — Lush means full, healthy, and thick with plants, which is exactly what steady rain does for a forest that is green. Bare would mean few plants, and brittle would mean dry and easily snapped, so both contradict the effect of rain. Tiny does not describe a whole forest growing greener.
- 34. D** — Hibernate means to spend the cold season in a deep sleep, and the clue is bears resting in dens while living on stored fat. Migrate means traveling to another place, which would mean leaving the den. Hunt would use up energy, and bloom is something plants do, so neither suits.

35. C — Dry grass burns easily, and a strong wind pushes flames along, so the fire would spread rapidly. Slowly is the opposite of what those two clues suggest. Sweetly describes a taste or a gentle manner, and rarely describes how often something happens, so neither explains how the flames moved. Only rapidly fits.

36. A — A roaring waterfall is loud enough that people must shout, so roar and loud fit both blanks together. A whisper is a quiet sound, so it cannot be so loud. Roar followed by quiet contradicts the need to shout, and sparkle with soft describes a gentle sight, not a noise.

37. C — Thin, icy air is harsh, so only a few animals can live there, and survive means to stay alive despite difficulty. Sparkle describes a shine, whistle describes a sound, and borrow means to take something temporarily. None of them explains why few animals would be found in such harsh conditions.

38. D — Nursed means cared for until healthy, which fits rangers helping an injured owl recover until it can fly. Ignoring or scaring the owl would not help it get strong again. Trapped could mean catching the bird, but being trapped would not make it ready to fly, so only nursed explains the recovery.

39. B — The word although signals a surprise, so the mountain must have looked easy from a distance, and gentle gives that contrast. Dangerous, rocky, and jagged all describe a hard, rough mountain, which would match the difficult climb rather than contradict it, so they cannot complete the sentence. Only gentle gives the contrast.

40. A — Each ring in a stump marks about one year of growth, so counting them lets scientists estimate the age of the tree. Erase, praise, and polish are actions that do not give any information about age. Only estimate describes using evidence to work out an approximate answer. Each ring counts one year.

41. B — Pine, oak, and maple are all kinds of trees, so birch, another kind of tree, belongs with them. A boulder is a rock, a stream is flowing water, and a trail is a path through the woods. Each of those is part of a forest setting, but none of them is a tree.

42. A — Bear, wolf, and fox are all wild animals that live in the woods, so moose belongs with them as another forest animal. Pine is a tree, canyon is a deep valley, and acorn is a nut. They may be found in the same places, but none of them is an animal like the first three.

43. D — A tent, a compass, and a lantern are all tools hikers take on a camping trip, so a flashlight belongs in the pack too. Canyon is a landform, moss is a plant, and trout is a fish. Those are things campers might see, but none of them is gear that someone carries and uses.

44. C — Creek, river, and brook all name moving water, so stream belongs with them. A cliff is a steep rock face, a ridge is a long high strip of land, and a meadow is an open grassy field. Those are landforms or places, and none of them is a body of flowing water.

45. C — Cliff, ridge, and peak are all high, rocky parts of a mountain, so slope, the side of a mountain, belongs with them. Fern and moss are small plants and acorn is a nut. They live on or near mountains, but they are plants and seeds, not parts of the mountain itself.

46. B — Fern, moss, and ivy are low plants that grow along the forest floor or climb on surfaces, so clover, another low plant, belongs with them. Spruce, maple, and cedar are tall trees with thick woody trunks. They are plants too, but they grow high above the ground and fail to match the small plants.

47. A — Hawk, owl, and falcon are birds that hunt other animals, so eagle, another hunting bird, belongs with them. A beaver, a lynx, and a salmon are not birds. A lynx hunts but it has fur and walks on four legs, so only eagle shares the feathers and wings of the first three birds.

48. D — Fog, mist, and drizzle are all kinds of damp weather made of tiny water drops, so sleet, which is frozen rain, belongs with them. A pebble is a small stone, an acorn is a nut, and a thicket is a dense patch of bushes. None of those is weather. Only sleet is weather too.

49. C — An axe, a saw, and a hatchet are all tools used to cut or shape wood, so a chisel belongs with them. A pebble is a small stone, an acorn is a nut, and bark is the outer cover of a tree. Those come from nature and are not tools that anyone uses to cut.

50. D — Dawn, noon, and dusk are parts of a single day, so midnight, another time of day, belongs with them. Autumn is a season lasting months, a glacier is a mass of ice, and a canyon is a deep valley. Only midnight names a moment within a day. The others are not times of day.

51. B — Granite, marble, and slate are all kinds of rock found in mountains, so limestone belongs with them. Timber and cedar come from trees, so they are wood. Charcoal is made by burning wood, so it is not a natural rock. Only limestone is a rock like the first three. The others are not rocks.

52. A — Trek, hike, and wander all mean to travel on foot across land, so roam, which means to walk about freely, belongs with them. Sleep and pause mean to stop moving and rest, and bake means to cook in an oven. None of those describes moving along a path on foot.

53. D — Canyon, valley, and gorge are all low, deep places between higher land, so ravine, a narrow valley, belongs with them. Summit, ridge, and peak are all high parts of a mountain, so they point upward while the first three describe low ground between the heights. Only ravine shares that low, narrow shape.

54. A — Bark, trunk, and root are all parts of a tree, so branch, another part of a tree, belongs with them. A squirrel is an animal living in the tree, a meadow is an open field, and shade is the shadow a tree casts. Those relate to trees but are not parts of one.

55. C — Gloomy, dim, and shadowy all describe places with little light, so dusky, which means dark and shadowy, belongs with them. Radiant, sparkling, and glowing all describe bright light. They are opposites of the first three words, so they would send the group in the wrong direction. Only dusky shares their gloomy meaning.

56. B — Timid, shy, and nervous all describe someone who feels uneasy or scared, so fearful belongs with them. Fierce and bold describe someone who is strong and unafraid, which is the opposite feeling. Cheerful describes a happy mood, not a worried one, so only fearful matches the others. Fearful simply means full of fear.

57. D — Hibernate, migrate, and forage are all things animals do to survive the seasons, so burrow, digging a shelter in the ground, belongs. Bloom is what plants do, and thaw and erode describe changes in ice and rock. Those are natural processes, not behaviors of animals. Only burrow is an animal behavior.

58. B — Tremble, shiver, and quiver all mean to shake in small, quick movements, so shudder belongs with them. March and gallop mean to move forward in steps or leaps, and tumble means to fall. None of them describes shaking in place the way the first three do. Only shudder shakes in place.

59. C — Predator, scavenger, and herbivore all name animals by the way they get their food, so omnivore, an animal that eats both plants and meat, belongs. Habitat and shelter name places where animals live, and a seedling is a young plant. Only omnivore describes how an animal eats. Omnivore matches that food-based group.

60. A — In $4 : 13$ and $7 : 16$, the second number is 9 more than the first, since 4 plus 9 is 13 and 7 plus 9 is 16. Adding 9 to 10 gives 19. The choice 20 adds 10, the choice 17 adds only 7, and the choice 23 adds 13, so each one fails to match both pairs.

61. A — In $6 : 20$ and $11 : 25$, the second number is 14 more than the first, since 6 plus 14 is 20 and 11 plus 14 is 25. Adding 14 to 23 gives 37. The choice 38 adds 15, the choice 46 doubles 23, and the choice 29 adds only 6, so none of them follows the rule.

62. C — In $31 : 23$ and $45 : 37$, the second number is 8 less than the first, since 31 minus 8 is 23 and 45 minus 8 is 37. Taking 8 away from 60 leaves 52. The choice 68 adds 8 instead, the choice 53 subtracts only 7, and the choice 48 subtracts 12, so each one breaks the rule.

63. D — In $50 : 33$ and $72 : 55$, the second number is 17 less than the first, since 50 minus 17 is 33 and 72 minus 17 is 55. Taking 17 from 90 gives 73. The choice 107 adds 17 instead, the choice 63 takes away 27, and the choice 72 takes away 18, so none of them works.

64. B — In $19 : 45$ and $34 : 60$, the second number is 26 more than the first, since 19 plus 26 is 45 and 34 plus 26 is 60. Adding 26 to 48 gives 74. The choice 22 subtracts 26, the choice 84 adds 36, and the choice 73 adds only 25, so each one breaks the rule.

65. D — In $3 : 12$ and $7 : 28$, the second number is four times the first, since 3 times 4 is 12 and 7 times 4 is 28. Multiplying 9 by 4 gives 36. The choice 13 adds 4, which fits neither pair. The choice 27 uses times 3, and the choice 45 uses times 5, so both fail.

66. B — In $4 : 24$ and $9 : 54$, the second number is six times the first, since 4 times 6 is 24 and 9 times 6 is 54. Multiplying 7 by 6 gives 42. The choice 13 adds 6, which fails for both pairs. The choice 49 squares 7, and the choice 35 multiplies by only 5, so neither works.

67. A — In $15 : 5$ and $33 : 11$, the second number is one third of the first, since 15 divided by 3 is 5 and 33 divided by 3 is 11. Dividing 48 by 3 gives 16. The choice 45 subtracts 3. The choice 24 halves 48, and the choice 12 divides by 4, so neither works.

68. C — In $20 : 4$ and $55 : 11$, the second number is one fifth of the first, since 20 divided by 5 is 4 and 55 divided by 5 is 11. Dividing 85 by 5 gives 17. The choice 80 subtracts 5, which fails for both pairs. The choices 15 and 19 are close but not one fifth.

69. B — In $8 : 56$ and $12 : 84$, the second number is seven times the first, since 8 times 7 is 56 and 12 times 7 is 84. Multiplying 15 by 7 gives 105. The choice 98 is 14 times 7, 120 is 15 times 8, and 22 adds 7, so none follows the rule.

70. D — In $6 : 13$ and $9 : 19$, the rule is double the number and then add 1, since 6 doubled is 12, plus 1 is 13, and 9 doubled is 18, plus 1 is 19. Doing the same to 14 gives 29. The choice 28 skips the add step, 30 adds 2, and 42 triples 14, so none fit.

71. A — In $7 : 11$ and $10 : 17$, the rule is double the number and then subtract 3, since 7 doubled is 14, minus 3 is 11, and 10 doubled is 20, minus 3 is 17. Doing the same to 15 gives 27. The choice 30 only doubles, 25 subtracts 5, and 33 triples.

72. C — In $4 : 10$ and $6 : 16$, the rule is triple the number and then subtract 2, since 4 tripled is 12, minus 2 is 10, and 6 tripled is 18, minus 2 is 16. Doing the same to 9 gives 25. The choice 27 skips the subtraction, 18 only doubles, and 23 subtracts too much.

73. B — In $2 : 13$ and $6 : 33$, the rule is multiply by 5 and then add 3, since 2 times 5 plus 3 is 13 and 6 times 5 plus 3 is 33. Doing the same to 8 gives 43. The choice 40 skips adding, and 45 and 48 add 5 and 8.

74. A — In $37 : 63$ and $58 : 42$, each pair adds up to 100, since 37 plus 63 is 100 and 58 plus 42 is 100. So 24 needs 76 to reach 100. The choice 124 adds 100 to 24, 64 is 100 minus 36, and 86 is 100 minus 14, so none completes it.

75. C — In $12 : 11$ and $20 : 15$, the rule is take half of the number and then add 5, since half of 12 plus 5 is 11 and half of 20 plus 5 is 15. Doing the same to 30 gives 20. The choice 35 adds 5 only, 15 skips the add step, and 25 adds 10.

76. D — In $6 : 36$ and $9 : 81$, the second number is the first number multiplied by itself, since 6 times 6 is 36 and 9 times 9 is 81. Multiplying 12 by itself gives 144. The choice 24 doubles 12, 120 is 12 times 10, and 132 is 12 times 11, so none is a square.

77. C — In $5 : 19$ and $9 : 31$, the rule is triple the number and then add 4, since 5 tripled plus 4 is 19 and 9 tripled plus 4 is 31. Doing the same to 14 gives 46. The choice 42 skips the add step, and the choices 49 and 52 add 7 and 10 instead of 4.

78. B — In $16 : 10$ and $40 : 16$, the rule is divide by 4 and then add 6, since 16 divided by 4 plus 6 is 10 and 40 divided by 4 plus 6 is 16. Doing the same to 64 gives 22. The choice 16 repeats the second pair, and 26 and 38 add too much.

79. A — In $3 : 22$ and $8 : 67$, the rule is multiply by 9 and then subtract 5, since 3 times 9 minus 5 is 22 and 8 times 9 minus 5 is 67. Doing the same to 6 gives 49. The choice 54 skips the subtraction, and the choices 59 and 44 subtract the wrong amount.

80. D — The blank is the number that must be added to 38 to reach 91, so subtract: 91 minus 38 equals 53. Check by adding 38 and 53 to get 91. The choice 129 adds the two numbers instead of subtracting, and the choices 63 and 54 are off by 10 and 1, so adding 38 to them misses 91.

81. D — Taking 27 away from the missing number leaves 48, so the missing number is 48 plus 27, which is 75. Check: 75 minus 27 equals 48. The choice 21 subtracts 27 from 48 instead of adding, and the choices 85 and 74 are off by 10 and 1, so neither leaves 48 after taking away 27.

82. B — The blank is the number that multiplies with 9 to make 117, so divide: 117 divided by 9 equals 13. Check: 9 times 13 is 117. The choices 12 and 14 are one off, giving 108 and 126 when multiplied by 9. The choice 126 adds 9 to 117 instead of dividing.

83. C — Dividing the missing number by 9 gives 14, so the missing number is 14 times 9, which is 126. Check: 126 divided by 9 equals 14. The choice 23 adds 9 to 14 instead of multiplying, and the choices 117 and 135 are 13 times 9 and 15 times 9, so neither gives 14 after dividing by 9.

84. A — Dividing 144 by the missing number gives 9, so the missing number is 144 divided by 9, which is 16. Check: 144 divided by 16 equals 9. The choices 15 and 17 are one off and give answers that are not whole nines. The choice 153 adds 9 to 144 instead of dividing.

85. A — The number taken from 96 leaves 39, so the missing number is 96 minus 39, which is 57. Check: 96 minus 57 equals 39. The choice 135 adds 96 and 39 instead of subtracting. The choices 56 and 67 leave 40 and 29, so neither makes the equation true. Only 57 fits.

86. B — Only multiplying 8 by 15 reaches 120, since 8 times 15 equals 120. Adding gives 8 plus 15, which is only 23. Subtracting leaves 7, which is far too small. Dividing 8 by 15 gives a fraction less than 1, so none of the other signs can produce a result as large as 120.

87. D — Work backward: add 6 to 49 to undo the subtraction, giving 55, then divide 55 by 5 to undo the multiplication, giving 11. Check: 11 times 5 is 55, minus 6 is 49. The choice 55 stops after the first step, and the choices 10 and 12 give 44 and 54 after the same steps.

88. C — First find the right side: 6 times 9 equals 54. Then the missing number plus 17 must equal 54, so the number is 54 minus 17, which is 37. The choice 71 adds 17 to 54 instead of subtracting. The choices 36 and 47 give totals of 53 and 64, so neither equals 54.

89. B — Three equal numbers add up to 63, so the number is 63 divided by 3, which is 21. Check: 21 plus 21 plus 21 equals 63. The choices 20 and 22 give totals of 60 and 66, and the choice 60 subtracts 3 from 63 instead of dividing, so none of them makes the sum 63.

90. A — Work backward: subtract 12 from 31 to get 19, then multiply by 5 to undo the division, giving 95. Check: 95 divided by 5 is 19, plus 12 is 31. The choice 19 stops after the first step. The choice 215 adds 12 before multiplying, and the choice 85 gives 29.

91. C — Dividing 56 by 7 gives 8, since 7 times 8 is 56. Adding 7 to 56 gives 63, and subtracting 7 gives 49, so neither equals 8. Multiplying 56 by 7 gives 392, which is much too large. Division is the only sign that brings 56 down to 8. Only division works here.

92. D — The number multiplied by itself must be 169, and 13 times 13 is 169. The choice 12 gives 144 when multiplied by itself, and the choice 14 gives 196, so both miss 169. The choice 84 is about half of 169, which would only work if the two numbers were added and not multiplied.

93. D — Work backward: subtract 15 from 87 to get 72, then divide by 6 to undo the multiplication, giving 12. Check: 12 times 6 is 72, plus 15 is 87. The choice 72 stops after the first step. The choice 17 divides 102 by 6, adding 15 instead of subtracting, and 14 gives 99.

94. C — Work backward: add 14 to 40 to get 54, then divide by 3, giving 18. Check: 3 times 18 is 54, minus 14 is 40. The choice 26 subtracts 14 from 40 instead of adding. The choice 8 divides 26 by 3 and gets a wrong value, and the choice 22 gives 52 after the same steps.

95. B — Subtracting 6 from 24 leaves 18, so minus is the sign. Adding 6 gives 30, which is too large. Multiplying gives 144, which is far too big. Dividing 24 by 6 gives only 4, which is much too small. Only subtraction makes the equation true. Only minus fits 24 and 6 to make 18.

96. A — The number times itself plus the number must be 72. Trying 8 gives 64 plus 8, which is 72. The choice 9 gives 81 plus 9, which is 90, and the choice 7 gives 49 plus 7, which is 56. The choice 36 is half of 72, which does not work, since 36 times 36 is far larger than 72.

97. C — Work backward: add 5 to 9 to get 14, then multiply by 8 to undo the division, giving 112. Check: 112 divided by 8 is 14, minus 5 is 9. The choice 14 stops after the first step. The choice 77 uses 9 minus 5 incorrectly, and the choice 120 is 8 more than the answer.

98. A — Work backward: subtract 8 from 78 to get 70, then divide by 7 to undo the multiplication, giving 10. Check: 7 times 10 is 70, plus 8 is 78. The choice 70 stops after the first step. The choices 12 and 9 give 92 and 71, so neither makes the equation true.

99. D — The sequence goes up by 9 each time, since 25 minus 16 is 9, 34 minus 25 is 9, and 43 minus 34 is 9. Adding 9 to 43 gives 52. The choice 51 adds only 8, the choice 53 adds 10, and the choice 61 adds 18, so none of them continues the steady jump of 9.

100. B — The sequence goes down by 7 each time, since 84 minus 7 is 77, then 70, then 63. Taking 7 from 63 gives 56. The choice 49 subtracts 14 and skips a step. The choices 57 and 60 subtract only 6 and 3, so neither continues the steady drop of 7.

101. A — The sequence goes up by 13 each time, since 19 minus 6 is 13, 32 minus 19 is 13, and 45 minus 32 is 13. Adding 13 to 45 gives 58. The choice 57 adds only 12, the choice 64 adds 19, and the choice 52 adds 7, so none of them keeps the steady jump of 13.

102. B — The sequence goes down by 12 each time, since 130 minus 12 is 118, then 106, then 94. Taking 12 from 94 gives 82. The choice 80 subtracts 14, and the choice 84 subtracts only 10. The choice 94 repeats the last number without any change, so none of them continues the drop of 12.

103. D — The sequence goes up by 8 each time, since 31 minus 23 is 8, 39 minus 31 is 8, and 47 minus 39 is 8. Adding 8 to 47 gives 55. The choice 54 adds only 7, the choice 56 adds 9, and the choice 63 adds 16, so none of them keeps the jump of 8.

104. C — The gaps grow by 1 each time: 1, 2, 3, then 4. The next gap is 5, and 27 plus 5 is 32. The choice 31 adds a gap of 4 again, which repeats the last step. The choices 33 and 36 add gaps of 6 and 9, which skip ahead too far in the growing pattern.

105. B — The gaps grow by 1 each time: 1, 2, 3, 4, then 5. The next gap is 6, and 16 plus 6 is 22. The choice 21 adds only 5, which repeats the last gap. The choices 23 and 27 add 7 and 11, which jump ahead of the growing pattern, so neither is correct.

106. A — The numbers drop by a bigger amount each time: 2, then 3, then 4. The next drop is 5, and 21 minus 5 is 16. The choice 17 drops only 4, which repeats the last step. The choices 15 and 18 drop 6 and 3, which do not follow the growing size of the drops.

107. C — The gaps are the odd numbers 1, 3, 5, and 7, so the next gap is 9. Then 20 plus 9 is 29. The choice 27 adds 7, which repeats the last gap. The choices 28 and 30 add 8 and 10, which are even gaps, so they break the pattern of odd numbers.

108. D — Each number is 6 times the one before it, since 3 times 6 is 18, 18 times 6 is 108, and 108 times 6 is 648. Multiplying 648 by 6 gives 3888. The choice 1296 doubles 648, the choice 2592 multiplies by 4, and the choice 3240 multiplies by 5, so each uses the wrong multiplier.

109. C — Each number is 7 times the one before it, since 2 times 7 is 14, 14 times 7 is 98, and 98 times 7 is 686. Multiplying 686 by 7 gives 4802. The choice 1372 doubles 686, the choice 2744 multiplies by 4, and the choice 4200 is close but is not 7 times 686.

110. B — Each number is one fifth of the one before it, since 6250 divided by 5 is 1250, then 250, then 50. Dividing 50 by 5 gives 10. The choice 25 halves 50, the choice 5 divides by 10, and the choice 40 subtracts 10, so none of them keeps dividing by 5.

111. D — The pattern alternates between adding 5 and subtracting 4. Starting at 40: plus 5 is 45, minus 4 is 41, plus 5 is 46, minus 4 is 42, plus 5 is 47. The next step subtracts 4, giving 43. The choice 48 adds 1 again, and the choices 44 and 52 do not follow the subtraction.

112. A — The pattern alternates between subtracting 3 and multiplying by 2. From 12: minus 3 is 9, times 2 is 18, minus 3 is 15, times 2 is 30, minus 3 is 27. Next comes times 2, and 27 doubled is 54. The choice 24 subtracts 3 again, and 57 adds 3 after doubling.

113. B — The pattern alternates between multiplying by 2 and subtracting 3. From 7: times 2 is 14, minus 3 is 11, times 2 is 22, minus 3 is 19, times 2 is 38. The next step subtracts 3, giving 35. The choice 41 adds 3 instead, and the choice 76 doubles again.

114. D — Two patterns are mixed together. The numbers in the first, third, and fifth places are 5, 8, 11, which go up by 3, so the next one is 14. The other pattern, 20, 17, 14, goes down by 3. The choices 11, 17, and 8 each repeat an earlier number from the sequence.

115. C — Two patterns are mixed together. The odd places count up by 2: 1, 3, 5, 7. The even places go down by 8: 60, 52, 44, so the next one is 36. The choice 28 drops 16, and the choice 9 continues the wrong pattern by adding 2. The choice 40 drops only 4.

116. A — Each number is double the one before it plus 1: 8 doubled is 16, plus 1 is 17; 17 doubled is 34, plus 1 is 35; and 35 doubled is 70, plus 1 is 71. So 71 doubled is 142, plus 1 is 143. The choice 142 forgets the plus 1, and 144 and 107 do not follow it.

117. C — Each number is triple the one before it plus 2: 4 tripled is 12, plus 2 is 14; 14 tripled is 42, plus 2 is 44; and 44 tripled is 132, plus 2 is 134. So 134 tripled is 402, plus 2 is 404. The choice 402 forgets the plus 2, and the choice 268 only doubles.

118. A — Each number is double the last one minus 2: 5 doubled is 10, minus 2 is 8; 8 doubled is 16, minus 2 is 14; and 14 doubled is 28, minus 2 is 26. So 26 doubled is 52, minus 2 is 50. The choice 52 forgets the minus 2, and 44 and 38 add wrong gaps.

119. B — Across the top row, the circle keeps its shape and shade but shrinks from large to small. Applying the same change to the large grey square gives a small grey square. The large grey square would mean nothing changed, the small grey circle changes the shape by mistake, and the small white square changes the shade.

120. D — Across the top row, the number of triangles rises from one to two while the shape, size, and shade stay the same. The bottom row must do the same, so one small white star becomes two small white stars. One star shows no change, two black stars change the shade, and three stars adds too many.

121. B — In the top row, the shape stays white but the black dot is removed. Doing the same to the white circle leaves an empty white circle. Keeping the dot shows no change, an empty black circle changes the shade, and an empty white square changes the shape, and neither of those changes happens in the top row.

122. D — The top row steps through the shades white, grey, and black while the shape stays the same. The bottom row follows that shade order with pentagons, so the last figure is a black pentagon. A black triangle changes the shape, a white pentagon starts the shade order again, and a black hexagon changes the number of sides.

123. A — The top row counts up by one each step: one, two, three. The bottom row counts the same way with small white squares, so the next figure has three of them. Three black dots change the shape and shade, two squares repeat the middle figure, and four squares jumps too far ahead in the count.

124. C — In the top row the two stacked shades trade places, so the white one moves from the top to the bottom. The same swap on the squares puts the black square above the white square. Leaving the order unchanged shows no swap, circles change the shape, and two black squares change a shade.

125. A — The top row flips the triangle to the other side of the tall line, like a mirror. The white circle must move from the left to the right of the line, keeping its shade. Staying on the left shows no flip, a black circle changes its shade, and moving above the line is a direction the top row never uses.

126. D — In the top row, the shapes stay the same but the shades swap, so black becomes white inside and white becomes black outside. The bottom row must swap the same way, giving a small white triangle inside a large black diamond. The first choice shows no swap, and the others change shapes or swap only one shade.

127. C — In the top row, the inside shape and outside shape trade places. The circle and square swap roles, so the triangle and star must swap too, giving a large star holding a small triangle. The unchanged figure shows no swap, the star holding a circle brings back an old shape, and the triangle holding a triangle copies one shape.

128. B — The top row turns a quarter turn clockwise each step: left, then up, then right. The bottom row follows the same turns, so the white triangle should point right. Pointing down skips a turn, a black arrow changes the shape and shade, and pointing left repeats the first figure and shows no turn at all.

129. D — In the top row, the third figure is the first two lines laid on top of each other. Placing a slanted line rising to the right over one falling to the right makes an X. A plus sign repeats the top row, a single line leaves one out, and a triangle needs three lines, so none combine the two lines.

130. A — In the top row, each figure has one more side than the one before: three, four, then five. The bottom row starts at four sides and five sides, so the next has six, which is a hexagon. A white square goes back to four sides, a white octagon has eight, and a black hexagon changes the shade.

131. B — The dot moves clockwise around the corners: top-left, top-right, then bottom-right. The bottom row follows the same path, so the white dot lands in the bottom-right corner of the black circle. Bottom-left skips ahead, top-left goes backward, and a white circle with a black dot swaps both shades. Only that corner continues the clockwise path.

132. C — Two things change along the top row: the count rises from one to three and the shade goes white, grey, black. The bottom row copies both with large triangles, so the last figure is three large black triangles. Three grey triangles miss the shade step, small triangles change the size, and two triangles miss the count.

133. B — The white shape moves one place to the right in each row: first place in row one, second place in row two. So row three needs it third, making the missing circle white. A black circle leaves no white shape, a white square changes the shape, and a grey circle uses a shade that never appears.

134. D — Each row uses all three shades once, and the order shifts by one place in every row. Row three has black and white, so the missing shade is grey, and the shape stays a cross. A black cross or a white cross would repeat a shade in the row, and a grey star changes the row's shape.

135. A — Every row grows from small to medium to large while its shape and shade stay the same. Row three has grey triangles, so the last one is a large grey triangle. A large white triangle changes the shade, a medium grey triangle repeats the middle step, and a large grey square changes the shape.

136. C — Adding the first two figures gives the third in every row: one plus two is three, and two plus two is four. In row three, three dots plus one dot makes four black dots. Three dots only repeats the first figure, five dots adds too many, and two dots subtracts instead of adds.

137. C — Each arrow turns a quarter turn clockwise from the one before it: up, right, down, left, then back to up. In row three, the arrow after left is up. Pointing down repeats the first figure of the row, pointing left repeats the second, and pointing right goes backward against the turn.

138. A — Each row and each column uses the same three figures once: the white circle, the grey square, and the black triangle. Row three already has the black triangle and the white circle, so the grey square is missing. A grey circle, a white square, and a black square mix up the shade or shape and never appear in the grid.

139. B — Folding the sheet in half makes two layers, and a punch goes through both of them. When the sheet is opened, the single punch has made one hole in each layer, so there are two holes. One hole forgets the second layer, while three and four holes count layers that do not exist after only one fold.

140. D — Folding into thirds makes three layers, and each punch goes through all three. Two punches times three layers makes six holes when the strip is opened. The choice of three holes counts only one punch, five holes adds instead of multiplies, and nine holes uses three punches, which is more than the two described.

141. D — Two folds make four layers, and each of the three punches goes through every layer, so the sheet has three times four, which is twelve holes. Seven holes adds three and four instead of multiplying. Eight holes uses only two punches, and sixteen holes uses four punches, which is one more than the three that were made.

142. A — The sheet has two layers, and each of the two punches goes through both layers, so each punch makes two holes. Two punches give four holes in all. Two holes counts only one punch, three holes treats one punch as making a single hole, and six holes would need three punches or three layers.

143. C — Each fold doubles the layers, so three folds give two, four, then eight layers. One punch goes through every layer and makes one hole in each, so the unfolded sheet has eight holes. Four holes counts only two folds. Six holes adds three folds in a wrong way, and sixteen holes doubles the layers once too often.

144. B — The folded edge is the middle line of the sheet, so a hole punched near it, halfway across, opens into two holes mirrored across that line. They sit just above and below the center. Side by side holes need a vertical fold, and holes near the top and bottom edges need a punch near the open edges.

145. D — After the left half folds over, the open edge matches both side edges of the sheet. A hole there makes one near the right edge and one near the left, both halfway up. Holes at the center come from a punch near the fold. Holes near the top need a higher punch, and one hole forgets a layer.

146. B — The strip has three layers, so the punch makes three holes. The punch lands in the middle of each third, so the holes are evenly spaced along the strip, with one in each section. Bunched holes would need a punch near the folds. One hole and two holes ignore the layers, since all three layers are punched.

147. A — Fan folding into four sections makes four layers, so the punch makes four holes. The punch goes through the middle of the stack, so each section gets a hole in its own middle, and the holes are evenly spaced. Bunched holes would need a punch near the folds. Three holes and two holes miss layers in the stack.

148. C — The fold line runs across the middle, and the bottom-left corner of the folded sheet matches both left corners of the open sheet. A hole there appears near the top-left and bottom-left corners. The

top corners need a punch near the fold. Four holes needs a second fold, and holes near the center need a punch near the fold.

149. C — Folding along the diagonal puts one corner onto the opposite corner, and that corner becomes the right-angle corner. The hole near it shows up near both opposite corners when opened. Neighboring corners would not be matched by a diagonal fold. Four holes needs a second fold, and holes at the center need a punch near the diagonal fold.

150. D — The middle of the folded diagonal edge is the center of the sheet. A hole just inside the crease opens into two holes mirrored across the diagonal, close together near the center. Opposite corners would need a punch near the right-angle corner. Four holes needs a second fold, and the middle of opposite sides is too far from the center.

151. B — The two folds make four layers, so the punch makes four holes. The top-right corner of the small square is the open corner, which matches all four corners of the sheet, so the holes sit near each corner. Holes around the center need a punch near where the creases meet. Two holes and one hole miss layers.

152. A — The two folds make four layers, and the small square is one quarter of the sheet. A hole in its middle opens into a hole in the middle of every quarter. Holes near the corners need a punch at the open corner. Holes around the center need a punch near the creases, and a straight row ignores the layers.

153. A — The two folded edges meet at the center of the sheet, so a hole punched near that corner opens into four holes around the center. Holes near each sheet corner would need a punch at the open corner. Two holes miss two layers, and one hole at the center needs a punch on the creases.

154. D — The hole near the folded edge opens into two holes close to the center line, and it is high, so they sit at the top. The hole near the open edge opens into two holes near the side edges, low at the bottom. One wrong choice swaps the positions, a row ignores heights, and corner holes ignore the fold.

155. B — Three folds make eight layers, and each punch goes through all of them. Two punches times eight layers makes sixteen holes. Eight holes counts only one punch. Ten holes adds two to the number of layers instead of multiplying, and twelve holes would come from three punches and four layers, which does not match the three folds described.

156. C — With four layers, each punch makes four holes. The top-right corner is the open corner, so its holes sit near the sheet corners. The bottom-left corner is where the creases meet, so its holes sit around the center. A row ignores corners, two near the center misses layers, and holes bunched at the center ignore the open corner.

157. B — The first punch went through two layers, so it makes two holes. The second punch goes through four layers, so it makes four more holes. Two plus four gives six holes. Eight holes counts both punches as going through four layers. Four holes forgets the first punch, and five holes counts the first punch as one hole.

158. A — All three figures are black circles, and only their sizes differ. A huge black circle keeps the shape and shade, so it fits the group even though the size is new. The huge white circle and huge grey

circle change the shade, and the huge black square changes the shape, so each one breaks something the first three share.

159. C — All three figures are triangles, even though the shading changes from figure to figure. A black triangle is another triangle with yet another shade, so it fits. The black square, black circle, and black star have the right shade but the wrong shapes, so none has three sides like the first three figures.

160. D — Every figure in the group contains exactly two shapes, while the kind of shape, size, and shade change freely. Two white triangles keeps the count of two. One white triangle has too few shapes, three white triangles has too many, and four white triangles is far too many, so the count is what all three figures share.

161. A — All three figures show three shapes of the same kind placed one inside another. Three stars nested one inside another follows that rule with a new shape. Two nested stars has too few layers, four nested stars has too many, and three stars side by side have the right count but are not nested, so each one breaks the pattern.

162. B — Each figure is a white shape with one black dot inside it. A white star with a black dot inside follows that rule. The star with no dot is missing the dot, the black star changes the shade of the outer shape, and the star with a dot outside places the dot in the wrong spot.

163. D — Every figure is a closed shape with exactly one straight tail attached. A star with one straight tail follows the same rule. The star with no tail is missing the tail, the star with two tails has one too many, and the star with a curved tail changes the tail from straight to curved, so each one fails.

164. C — In every figure, a grey dot sits above a white shape. A grey dot above a white star keeps both the positions and the shades. The grey dot below the star reverses the position, the white dot above a grey star swaps both shades, and the grey dot beside the star moves the dot to the side instead of above.

165. B — Each figure is a shape divided into exactly two equal parts, and the kind of shape changes. A star cut into two equal parts follows that rule. The star cut into three parts and the star cut into four parts have too many pieces, and the star with no cuts has only one piece, so none match.

166. D — Every row has four shapes whose shades alternate, beginning with black. A row of four stars in that order matches. The row that begins black, black does not alternate, the row starting with white reverses the order, and the row of three stars has the right alternation but one shape too few.

167. C — The common feature of all three figures is the direction: each one points upward, while the shape changes. A chevron pointing up keeps that direction. The chevrons pointing down, left, and right all point somewhere else, so even though they share the chevron shape, none of them points up the way the first three do.

168. A — In each figure, the left half is black and the right half is white. A star with the same left-black, right-white split matches. The star with the halves swapped reverses the sides, the star with a black top changes the direction of the split, and the all-black star has no white half at all.

169. D — Each figure shows exactly two matching shapes that partly overlap. Two stars that overlap each other follows that rule. Two stars side by side and not touching do not overlap, two stars with one inside the other overlap completely instead of partly, and three overlapping stars have one shape too many.

170. A — Each figure has a large shape next to a small shape of the same kind. A large star beside a small star follows both parts of the rule. The pair of small stars has no large shape, the star beside a circle mixes two kinds of shapes, and two large stars have no size difference.

171. B — Each figure has a big shape with a smaller copy of the same shape sitting on top. A large diamond with a small diamond on top matches. A small circle on top changes the kind of shape, a small diamond below is on the wrong side, and a small diamond with a large diamond on top reverses the sizes.

172. C — All three figures hold exactly two black dots inside, while the big shape and its shade vary. A big grey star holding two black dots follows the rule. Three black dots has one dot too many, two white dots changes the dot shade, and dots outside the star are not held inside it.

173. A — The square, rectangle, and diamond are all four-sided shapes with straight edges. A trapezoid also has four straight sides, so it fits. A triangle has only three sides, a pentagon has five sides, and a circle has no straight sides at all, so each of those fails to match the number of sides in the first three figures.

174. D — The circle, the oval, and the ring are all smooth, curved shapes with no corners. A smooth egg shape has the same round edge and no corners. The rectangle, the star, and the triangle all have sharp corners, so even though they are shapes like the others, they break the feature of having none.

175. C — Each of the three figures has both a curved edge and straight edges. A quarter circle has one curved edge and two straight edges, so it matches. A full circle is entirely curved, while a square and a triangle are entirely straight, so none of those three has the mix of curved and straight that the first three share.

176. B — In each figure, the number of dots equals the number of sides: three, four, and five. A hexagon has six sides, so it needs six dots. The hexagon with five dots has too few, and the hexagon with seven dots has too many. The square with six dots has four sides but six dots, so it does not match.