

PRACTICE EXAM 17: 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. Acorn is to oak as egg is to ____.

- A. shell
- B. chick
- C. nest
- D. feather

2. Trowel is to dirt as hose is to ____.

- A. water
- B. bricks
- C. fence
- D. seeds

3. Petal is to flower as feather is to ____.

- A. pond
- B. cloud
- C. fence
- D. bird

4. Bee is to hive as bird is to ____.

- A. pond
- B. leaf
- C. nest
- D. seed

5. Gardener is to garden as teacher is to ____.

- A. bakery
- B. ocean
- C. barn
- D. school

6. Root is to soil as fin is to ____.

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

7. Sapling is to tree as puppy is to ____.

- A. bone
- B. kennel
- C. dog
- D. leash

8. Greenhouse is to plants as aquarium is to ____.

- A. fish
- B. books
- C. rocks
- D. clocks

9. Apple is to tree as tomato is to ____.

- A. stone
- B. shell
- C. vine
- D. hive

10. Wilted is to fresh as rusty is to ____.

- A. heavy
- B. shiny
- C. metal
- D. brown

11. Pruning is to hedge as mowing is to ____.

- A. lawn
- B. rake
- C. sun
- D. shed

12. Cactus is to desert as seaweed is to ____.

- A. forest

- B. mountain
- C. meadow
- D. ocean

13. Fertilizer is to plants as vitamins are to ____.

- A. stones
- B. tools
- C. people
- D. clouds

14. Mulch is to soil as lid is to ____.

- A. pot
- B. spoon
- C. stove
- D. water

15. Scarecrow is to crows as lock is to ____.

- A. doors
- B. keys
- C. windows
- D. thieves

16. Orchard is to apples as vineyard is to ____.

- A. pears
- B. grapes
- C. wheat
- D. melons

17. Nectar is to flower as sap is to ____.

- A. tree
- B. pond
- C. cloud
- D. stone

18. Germinate is to seed as hatch is to ____.

- A. nest
- B. egg
- C. wing
- D. sun

19. Fertile is to barren as busy is to ____.

- A. tired
- B. loud
- C. crowded
- D. idle

20. Drizzle is to downpour as breeze is to ____.

- A. drizzle
- B. sunshine
- C. gale
- D. puddle

21. Dad filled the can so he could ____ the thirsty tulips.

- A. paint
- B. count
- C. water
- D. wrap

22. A snail left a shiny, _____ trail across the garden path.

- A. noisy
- B. slimy
- C. spicy
- D. frozen

23. The sun was so hot that the tomato plants began to _____.

- A. wilt
- B. sing
- C. freeze
- D. float

24. Bees visit each flower because they want its sweet _____.

- A. gravel
- B. smoke
- C. paint
- D. nectar

25. Ana wore gloves so the sharp _____ on the rose bush would not scratch her.

- A. petals

- B. thorns
- C. buds
- D. roots

26. After the long drought, the cracked field was too dry to ____ any crops.

- A. grow
- B. wash
- C. carry
- D. paint

27. The class planted beans in cups to ____ how fast the sprouts rise each day.

- A. forget
- B. hide
- C. wrap
- D. measure

28. Grandma mixes fruit peels and old leaves into ____ that feeds the garden soil.

- A. glass
- B. soup
- C. compost
- D. cement

29. A tall fence keeps the rabbits from ____ the lettuce.

- A. eating
- B. planting
- C. painting
- D. counting

30. The vine climbed the trellis because it needed something _____ to hold onto.

- A. slippery
- B. melting
- C. sturdy
- D. tiny

31. Because the seedling got too little light, its stem grew thin and _____.

- A. strong
- B. weak
- C. heavy
- D. loud

32. Mr. Cho pulled up the _____ because they were crowding out his carrots.

- A. pots
- B. gloves
- C. rakes
- D. weeds

33. The cactus survives in the desert because it stores water in its thick _____.

- A. petals
- B. stem
- C. pollen
- D. thorns

34. Baby tomato plants are so _____ that even a strong wind can snap them.

- A. fragile
- B. sturdy
- C. ancient
- D. enormous

35. Mina checked the soil each morning to see whether it had become _____ and needed water.

- A. muddy
- B. frozen
- C. dry
- D. rich

36. The _____ rain helped the garden _____ after the long dry spell.

- A. steady, shrink
- B. scorching, bloom
- C. dusty, shrink
- D. steady, bloom

37. Farmers move crops to different fields each year so the soil does not lose its _____.

- A. color
- B. nutrients
- C. noise
- D. shadows

38. The orchard owner was so _____ that she checked every tree for pests each morning.

- A. careless

- B. lazy
- C. careful
- D. sleepy

39. The farmer felt ____ about the late frost because it could ruin the whole crop.

- A. anxious
- B. delighted
- C. bored
- D. amused

40. The plot looked lifeless all winter, but the bulbs were only ____ and woke in spring.

- A. extinct
- B. ruined
- C. hollow
- D. dormant

41. Which word belongs with: daisy, tulip, rose?

- A. lily
- B. shovel
- C. bucket
- D. soil

42. Which word belongs with: rake, hoe, trowel?

- A. seed
- B. petal
- C. shovel
- D. worm

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

- A. tulip
- B. birch
- C. grass
- D. ivy

44. Which word belongs with: carrot, beet, radish?

- A. lettuce
- B. pea
- C. corn
- D. turnip

45. Which word belongs with: moth, wasp, cricket?

- A. spider
- B. worm
- C. snail
- D. ladybug

46. Which word belongs with: basil, mint, parsley?

- A. thyme
- B. potato
- C. cherry
- D. maple

47. Which word belongs with: pond, creek, stream?

- A. hill
- B. meadow
- C. river
- D. hedge

48. Which word belongs with: petal, stem, leaf?

- A. bee
- B. root
- C. hose
- D. bucket

49. Which word belongs with: pear, cherry, apricot?

- A. onion
- B. plum
- C. bean
- D. celery

50. Which word belongs with: summer, autumn, winter?

- A. morning
- B. calendar
- C. spring
- D. weather

51. Which word belongs with: soil, sand, clay?

- A. gravel

- B. rain
- C. root
- D. seed

52. Which word belongs with: tadpole, caterpillar, chick?

- A. whisker
- B. burrow
- C. barn
- D. kitten

53. Which word belongs with: lettuce, spinach, cabbage?

- A. potato
- B. pumpkin
- C. kale
- D. onion

54. Which word belongs with: robin, sparrow, finch?

- A. bat
- B. wren
- C. moth
- D. frog

55. Which word belongs with: pumpkin, squash, cucumber?

- A. melon
- B. carrot
- C. onion
- D. celery

56. Which word belongs with: sunlight, water, air?

- A. rake
- B. bee
- C. fence
- D. soil

57. Which word belongs with: pollinate, sprout, bloom?

- A. swim
- B. hatch
- C. ripen
- D. bark

58. Which word belongs with: damp, moist, soggy?

- A. parched
- B. brittle
- C. dusty
- D. humid

59. Which word belongs with: bulb, tuber, seed?

- A. cutting
- B. flower
- C. fruit
- D. pebble

60. Two number pairs follow the same rule: $14 : 21$ and $30 : 37$. Which number goes with 52 ($52 : ?$) in the same way?

- A. 58
- B. 59
- C. 60
- D. 104

61. Two number pairs follow the same rule: $23 : 31$ and $45 : 53$. Which number goes with 67 ($67 : ?$) in the same way?

- A. 74
- B. 76
- C. 75
- D. 134

62. Two number pairs follow the same rule: $9 : 3$ and $21 : 15$. Which number goes with 40 ($40 : ?$) in the same way?

- A. 34
- B. 33
- C. 35
- D. 46

63. Two number pairs follow the same rule: $3 : 15$ and $8 : 40$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 54
- B. 45
- C. 36
- D. 29

64. Two number pairs follow the same rule: $6 : 42$ and $8 : 56$. Which number goes with 11 ($11 : ?$) in the same way?

- A. 66
- B. 88
- C. 18
- D. 77

65. Two number pairs follow the same rule: $56 : 7$ and $72 : 9$. Which number goes with 96 ($96 : ?$) in the same way?

- A. 88
- B. 12
- C. 104
- D. 16

66. Two number pairs follow the same rule: $15 : 45$ and $12 : 36$. Which number goes with 17 ($17 : ?$) in the same way?

- A. 51
- B. 34
- C. 20
- D. 48

67. Two number pairs follow the same rule: $38 : 25$ and $61 : 48$. Which number goes with 74 ($74 : ?$) in the same way?

- A. 87
- B. 60
- C. 61
- D. 62

68. Two number pairs follow the same rule: $9 : 54$ and $12 : 72$. Which number goes with 15 ($15 : ?$) in the same way?

- A. 84
- B. 96
- C. 75
- D. 90

69. Two number pairs follow the same rule: $63 : 9$ and $49 : 7$. Which number goes with 35 ($35 : ?$) in the same way?

- A. 28
- B. 5
- C. 42
- D. 7

70. Two number pairs follow the same rule: $17 : 40$ and $26 : 49$. Which number goes with 38 ($38 : ?$) in the same way?

- A. 60
- B. 62
- C. 76
- D. 61

71. Two number pairs follow the same rule: $5 : 11$ and $9 : 19$. Which number goes with 13 ($13 : ?$) in the same way?

- A. 26
- B. 28
- C. 27
- D. 39

72. Two number pairs follow the same rule: $5 : 14$ and $8 : 23$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 29
- B. 30
- C. 28
- D. 31

73. Two number pairs follow the same rule: $6 : 15$ and $11 : 25$. Which number goes with 14 ($14 : ?$) in the same way?

- A. 28
- B. 17
- C. 29
- D. 31

74. Two number pairs follow the same rule: $16 : 11$ and $30 : 18$. Which number goes with 24 ($24 : ?$) in the same way?

- A. 12
- B. 27
- C. 15
- D. 14

75. Two number pairs follow the same rule: $6 : 36$ and $8 : 64$. Which number goes with 12 ($12 : ?$) in the same way?

- A. 24
- B. 144
- C. 132
- D. 156

76. Two number pairs follow the same rule: $13 : 16$ and $20 : 30$. Which number goes with 31 ($31 : ?$) in the same way?

- A. 52
- B. 26
- C. 36
- D. 62

77. Two number pairs follow the same rule: $28 : 16$ and $44 : 20$. Which number goes with 60 ($60 : ?$) in the same way?

- A. 15
- B. 69
- C. 24
- D. 33

78. Two number pairs follow the same rule: $5 : 20$ and $7 : 42$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 81
- B. 72
- C. 18
- D. 63

79. Two number pairs follow the same rule: $6 : 26$ and $9 : 41$. Which number goes with 12 ($12 : ?$) in the same way?

- A. 56
- B. 60
- C. 52
- D. 64

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

- A. 129
- B. 43
- C. 54
- D. 53

81. Solve: $85 - ? = 49$. What number goes in the blank?

- A. 36
- B. 134
- C. 46
- D. 35

82. Solve: $? - 29 = 54$. What number goes in the blank?

- A. 25
- B. 73
- C. 82
- D. 83

83. Solve: $14 \times ? = 182$. What number goes in the blank?

- A. 168
- B. 13
- C. 196
- D. 14

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

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

85. Solve: $? \div 9 = 6$. What number goes in the blank?

- A. 15
- B. 63
- C. 45
- D. 54

86. Solve: $84 \div ? = 7$. What number goes in the blank?

- A. 77
- B. 91
- C. 12
- D. 11

87. Solve: $? + ? = 126$. Both blanks hold the same number. What is it?

- A. 63
- B. 126
- C. 62
- D. 64

88. Which sign makes this true? $6 ? 14 = 84$

- A. plus
- B. times
- C. minus

D. divided by

89. Solve: $? \times ? = 289$. Both blanks hold the same number. What is it?

- A. 17
- B. 34
- C. 16
- D. 18

90. Solve: $6 \times ? + 7 = 61$. What number goes in the blank?

- A. 54
- B. 9
- C. 8
- D. 11

91. Solve: $? \times 4 - 15 = 37$. What number goes in the blank?

- A. 52
- B. 12
- C. 14
- D. 13

92. Which sign makes this true? $96 ? 8 = 12$

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

93. Solve: $? + ? + ? = 69$. All three blanks hold the same number. What is it?

- A. 22
- B. 24
- C. 17
- D. 23

94. Solve: $70 - 4 \times ? = 38$. What number goes in the blank?

- A. 32
- B. 7
- C. 8
- D. 10

95. Solve: $? \div 4 + 15 = 22$. What number goes in the blank?

- A. 7
- B. 28
- C. 88
- D. 29

96. Solve: $7 \times ? + 12 = 75$. What number goes in the blank?

- A. 9
- B. 63
- C. 12
- D. 10

97. Solve: $? \times 8 - 20 = 60$. What number goes in the blank?

- A. 80
- B. 9
- C. 8
- D. 10

98. Each ? stands for the same number: $? \times ? + ? = 30$. What is the number?

- A. 6
- B. 5
- C. 4
- D. 7

99. What number comes next? 34, 40, 46, 52, ?

- A. 57
- B. 59
- C. 58
- D. 64

100. What number comes next? 91, 82, 73, 64, ?

- A. 55
- B. 54
- C. 56
- D. 46

101. What number comes next? 17, 31, 45, 59, ?

- A. 73
- B. 72
- C. 74

D. 76

102. What number comes next? 100, 87, 74, 61, ?

A. 47

B. 49

C. 48

D. 35

103. What number comes next? 12, 36, 108, 324, ?

A. 648

B. 432

C. 970

D. 972

104. What number comes next? 1760, 880, 440, 220, ?

A. 55

B. 110

C. 130

D. 100

105. What number comes next? 15, 16, 18, 21, 25, ?

A. 30

B. 29

C. 31

D. 35

106. What number comes next? 7, 8, 11, 16, 23, ?

- A. 30
- B. 32
- C. 31
- D. 39

107. What number comes next? 9, 19, 39, 79, ?

- A. 158
- B. 160
- C. 159
- D. 119

108. What number comes next? 20, 35, 18, 33, 16, ?

- A. 14
- B. 32
- C. 29
- D. 31

109. What number comes next? 7, 50, 11, 46, 15, 42, ?

- A. 38
- B. 19
- C. 23
- D. 18

110. What number comes next? 80, 5, 70, 8, 60, 11, ?

- A. 14
- B. 40
- C. 50
- D. 52

111. What number comes next? 6, 11, 21, 41, 81, ?

- A. 162
- B. 160
- C. 121
- D. 161

112. What number comes next? 1944, 648, 216, 72, ?

- A. 24
- B. 48
- C. 8
- D. 36

113. What number comes next? 8, 11, 17, 26, 38, ?

- A. 50
- B. 52
- C. 53
- D. 41

114. What number comes next? 90, 88, 84, 78, 70, ?

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

D. 50

115. What number comes next? 6, 12, 7, 14, 9, ?

A. 18

B. 13

C. 4

D. 23

116. What number comes next? 3, 8, 16, 21, 42, 47, ?

A. 52

B. 89

C. 98

D. 94

117. What number comes next? 4, 5, 9, 14, 23, 37, ?

A. 51

B. 61

C. 60

D. 74

118. What number comes next? 13, 15, 19, 27, 43, ?

A. 75

B. 59

C. 74

D. 86

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

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

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

- A. six black squares
- B. five grey squares
- C. three black squares
- D. five black squares

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

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

122. In a 2 by 2 grid, the top row shows a dot above a white square, then a dot below a white square. The bottom row shows a dot above a grey circle, then a missing figure. Which figure completes the grid?

- A. a dot above a grey circle
- B. a dot inside a grey circle
- C. a dot below a grey square
- D. a dot below a grey circle

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

- A. a grey square
- B. a grey heptagon
- C. a grey hexagon
- D. a white hexagon

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

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

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

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

126. In a 2 by 3 grid, the top row shows a small, a medium, then a large white square. The bottom row shows a small black diamond, a medium black diamond, then a missing figure. Which figure completes the grid?

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

- C. a large white diamond
- D. a large black square

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

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

128. In a 2 by 3 grid, the top row shows one vertical line, one horizontal line, then a plus sign made of both lines. The bottom row shows one slanted line rising to the right, one slanted line rising to the left, then a missing figure. Which figure completes the grid?

- A. a plus sign made of both
- B. one vertical line only
- C. an X made of both lines
- D. a V shape of two lines

129. In a 3 by 3 grid, the top row shows a white circle, a grey circle, a black circle. The middle row shows a grey square, a black square, a white square. The bottom row shows a black triangle, a white triangle, then a missing figure. Which figure completes the grid?

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

130. In a 3 by 3 grid, the top row shows one white diamond, three white diamonds, five white diamonds. The middle row shows one black moon, three black moons, five black moons. The bottom row shows one grey cross, three grey crosses, then a missing figure. Which figure completes the grid?

- A. four grey crosses
- B. five black crosses
- C. five grey crosses
- D. five grey moons

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

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

132. In a 3 by 3 grid, the top row shows a large, medium, then small white square. The middle row shows a large, medium, then small grey circle. The bottom row shows a large black pentagon, a medium black pentagon, then a missing figure. Which figure completes the grid?

- A. a large black pentagon
- B. a small grey pentagon
- C. a small black circle
- D. a small black pentagon

133. In a 3 by 3 grid, every figure is a white square holding one black dot in a corner. The top row has the dot in the top-left, top-right, then bottom-right corners. The middle row has it in the top-right, bottom-right, then bottom-left. The bottom row has it in the bottom-right, bottom-left, then a missing figure. Which figure completes the grid?

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

134. In a 3 by 3 grid, the top row shows a white circle, a white square, a white triangle. The middle row shows a grey circle, a grey square, a grey triangle. The bottom row shows a black circle, a black square, then a missing figure. Which figure completes the grid?

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

135. In a 3 by 3 grid, the top row shows six, four, then two small circles. The middle row shows eight, six, then four small squares. The bottom row shows nine, seven, then a missing figure of small stars. Which figure completes the grid?

- A. three small stars
- B. five small circles
- C. six small stars
- D. five small stars

136. In a 3 by 3 grid, the top row shows a large white circle, a small black circle, then a large white circle holding a small black circle. The middle row shows the same with a large white square and a small grey square. The bottom row shows a large white triangle, a small black triangle, then a missing figure. Which figure completes the grid?

- A. a large white triangle holding a small black triangle
- B. a small black triangle alone
- C. a large black triangle holding a small white triangle
- D. a large white triangle holding a small black circle

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

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

138. In a 3 by 3 grid, the top row shows a white circle with its left half black, a white circle with its right half black, then a fully black circle. The middle row shows the same for squares, with top and bottom halves. The bottom row shows a white hexagon with its top half black, a white hexagon with its bottom half black, then a missing figure. Which figure completes the grid?

- A. a fully black hexagon
- B. a white hexagon
- C. a hexagon with a black top half
- D. a grey hexagon

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 does the opened sheet have?

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

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

- A. 3 holes
- B. 5 holes

- C. 9 holes
- D. 6 holes

141. A long paper strip is folded like a letter into three equal parts, making three layers. One hole is punched through all the layers, away from the creases. How many holes does the opened strip have?

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

142. A square sheet is folded in half, and then folded in half again, making four layers. One hole is punched through all four layers, away from the creases. How many holes does the opened sheet have?

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

143. A paper circle is folded in half, then in half again, making four layers. Two holes are punched through all four layers, away from the creases. How many holes does the opened circle have?

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

144. A paper strip is folded back and forth like a fan into five equal parts, making five layers. Two holes are punched through all the layers, away from the creases. How many holes does the opened strip have?

- A. 7 holes

- B. 10 holes
- C. 5 holes
- D. 8 holes

145. A sheet of paper is folded in half three times, making eight layers. One hole is punched through all the layers, away from the creases. How many holes does the opened sheet have?

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

146. A sheet of paper is folded in half once and then folded into thirds, making six layers. One hole is punched through all the layers, away from the creases. How many holes does the opened sheet have?

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

147. A square sheet is folded in half once, and one hole is punched through both layers. The sheet is then folded in half again, making four layers, and one more hole is punched through all four layers, away from the first hole. How many holes does the opened sheet have?

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

148. A square sheet is folded in half from left to right, so the crease runs down the middle. One hole is punched near the top of the folded paper, close to the edge opposite the crease. What does the opened sheet show?

- A. two holes near the top, both close to the middle crease
- B. one hole near the top, close to one side edge
- C. two holes near the top, one close to each side edge
- D. two holes near the bottom, one close to each side edge

149. A square sheet is folded in half from left to right, so the crease runs down the middle. One hole is punched near the bottom of the folded paper, very close to the crease. What does the opened sheet show?

- A. two holes low down, at the two bottom corners
- B. two holes low down, one on each side of the middle
- C. two holes high up, one on each side of the middle
- D. one hole low down, right in the middle of the sheet

150. A square sheet is folded in half from top to bottom, so the crease runs across the middle. One hole is punched in the middle of the folded paper, very close to the crease. What does the opened sheet show?

- A. two holes, both just above the crease in the middle
- B. two holes at the top and bottom edges, in the middle
- C. one hole only, at the very center of the sheet
- D. two holes, one just above the crease and one just below

151. A square sheet is folded corner to corner to make a triangle. One hole is punched close to the right-angle corner of the triangle. What does the opened sheet show?

- A. two holes, near two opposite corners of the sheet
- B. two holes, near two neighboring corners of the sheet
- C. one hole, near one corner of the sheet
- D. two holes, both near the middle of the sheet

152. A square sheet is folded in half from top to bottom, then in half from left to right, making a small square. One hole is punched close to the corner where the two creases meet. What does the opened sheet show?

- A. four holes close to the corners, one in each quarter
- B. two holes close to the center, side by side
- C. four holes close to the center, one in each quarter
- D. one hole at the center of the sheet

153. A square sheet is folded in half from top to bottom, then in half from left to right, making a small square. One hole is punched close to the corner farthest from where the two creases meet. What does the opened sheet show?

- A. four holes, all close to the center of the sheet
- B. four holes in a row across the middle of the sheet
- C. four holes, one close to each corner of the sheet
- D. two holes, near the two top corners of the sheet

154. A square sheet is folded in half from left to right, then in half from top to bottom. One hole is punched near the middle of the right-hand edge of the small square. What does the opened sheet show?

- A. four holes, two near the left edge and two near the right edge
- B. four holes, two near the top edge and two near the bottom edge
- C. four holes, all bunched close to the center of the sheet
- D. two holes, one near the left edge and one near the right

155. A square sheet is folded corner to corner into a triangle, then that triangle is folded in half again, making four layers. Three holes are punched through all four layers, away from the creases. How many holes does the opened sheet have?

- A. 7 holes
- B. 8 holes

- C. 16 holes
- D. 12 holes

156. A paper strip is folded back and forth like a fan into seven equal parts, making seven layers. Two holes are punched through all the layers, away from the creases. How many holes does the opened strip have?

- A. 9 holes
- B. 14 holes
- C. 7 holes
- D. 12 holes

157. A square sheet is folded in half from top to bottom, then in half from left to right, making four layers. One hole is punched close to the corner where the two creases meet, and one more is punched close to the opposite corner. How many holes does the opened sheet have?

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

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

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

159. Three figures are shown. The first is a black square. The second is a black star. The third is a black heart. Which figure is most like the first three?

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

160. Three figures are shown. The first is a small white square. The second is a small black heart. The third is a small grey cross. Which figure is most like the first three?

- A. a large striped circle
- B. a medium striped circle
- C. a huge striped circle
- D. a small striped circle

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

- A. a striped heart with one dot inside
- B. a striped heart with two dots inside
- C. a striped heart with three dots inside
- D. a striped heart with two dots outside

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

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

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

- A. a heart with three stripes
- B. a heart with two stripes
- C. a heart with four stripes
- D. a heart with five stripes

164. Three figures are shown. The first is a white arrow pointing up. The second is a black arrow pointing up. The third is a grey arrow pointing up. Which figure is most like the first three?

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

165. Three figures are shown. The first is a small white circle sitting on top of a large black square. The second is a small white triangle sitting on top of a large black pentagon. The third is a small white heart sitting on top of a large black oval. Which figure is most like the first three?

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

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

- A. two striped stars in a row
- B. four striped stars in a row
- C. five striped stars in a row

D. three striped stars in a row

167. Three figures are shown. The first is a white circle cut in half by one straight line. The second is a grey square cut in half by one straight line. The third is a black hexagon cut in half by one straight line. Which figure is most like the first three?

- A. a star split by one line
- B. a star with no line
- C. a star split by two lines
- D. a star with one dot

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

- A. a hexagon with its left half black
- B. a hexagon with its right half black
- C. a hexagon with its bottom half black
- D. a hexagon that is all black

169. Three figures are shown. The first is a white circle with a round hole in its middle. The second is a black square with a round hole in its middle. The third is a grey triangle with a round hole in its middle. Which figure is most like the first three?

- A. a striped star with a hole near one point
- B. a striped star with a round hole in its middle
- C. a striped star with a dot in its middle
- D. a striped star with no hole

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

- A. a short, wide striped hexagon
- B. a short, wide striped oval
- C. a tall, narrow striped hexagon
- D. a small, round striped circle

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

- A. a large striped star holding a small striped star
- B. a large striped star holding a small striped circle
- C. a large striped star with a small striped star beside it
- D. two large striped stars side by side

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

- A. a row of four stars that are all white
- B. a row of four stars that go white, white, black, black
- C. a row of three stars that go white, black, white
- D. a row of four stars that go white, black, white, black

173. Three figures are shown. The first is a square split into four equal boxes, two black and two white. The second is a circle split into four equal wedges, two black and two white. The third is a diamond split into four small triangles, two black and two white. Which figure is most like the first three?

- A. a rectangle split into four parts, two black
- B. a rectangle split into four parts, one black
- C. a rectangle split into four parts, three black
- D. a rectangle split into four parts, none black

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

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

175. Three figures are shown. The first is a row of three small circles, two white and one black. The second is a row of six small squares, four white and two black. The third is a row of nine small triangles, six white and three black. Which figure is most like the first three?

- A. a row of twelve small stars, eight white and two black
- B. a row of twelve small stars, six white and six black
- C. a row of twelve small stars, nine white and three black
- D. a row of twelve small stars, eight white and four black

176. Three figures are shown. The first is two dots and one line. The second is three dots and two lines. The third is four dots and three lines. Which figure is most like the first three?

- A. five dots and five lines
- B. five dots and four lines
- C. four dots and five lines
- D. six dots and four lines

Practice Exam 17: Answer Key and Explanations

1. B — An acorn is the seed that grows into an oak, and an egg is what grows into a chick, so each pair shows a start and what it becomes. A shell is the outside of an egg, a nest just holds eggs, and a feather grows on a chick later. None of them is what the egg turns into.

- 2. A** — A trowel is a small tool for scooping dirt, and a hose is a tool for spraying water, so each tool is paired with the material it moves. Bricks are carried by builders, a fence stands in place around a garden, and seeds are dropped into holes by hand. None of those flows through a hose, so only water fits.
- 3. D** — A petal is one part of a flower, and a feather is one part of a bird. Each pair joins a small part to the whole it belongs to. A pond, a cloud, and a fence have no feathers on them, even though birds may fly over or perch on them, so only bird fits the part-to-whole pattern.
- 4. C** — A bee lives and raises young in a hive, and a bird lives and raises young in a nest. Both pairs name an animal and its home. A pond is a place for ducks to swim, while a leaf and a seed are plant parts that a bird might eat or hide under, not a home to raise its young.
- 5. D** — A gardener works in a garden, and a teacher works in a school. Each pair links a worker with the place where the job is done. A bakery is where a baker works, an ocean is where sailors and fishers work, and a barn is where farmers work, so none of them matches the teacher.
- 6. B** — A root grows down into the soil, which is where a plant lives and drinks, and a fin moves through water, which is where a fish lives and swims. Sand may lie under water but fish do not swim in it, the sky is for wings, and grass grows on land, so only water matches the pattern.
- 7. C** — A sapling is a young tree, and a puppy is a young dog, so each pair joins a young form with the adult it becomes. A bone, a kennel, and a leash are things that belong to a dog, but a puppy does not grow into any of them. Dog is the only choice that is the grown-up form.
- 8. A** — A greenhouse is a building made to keep plants alive, and an aquarium is a glass tank made to keep fish alive. Each place is built to hold living things safely. Books, rocks, and clocks are things you might find in a room, but they are not alive, and an aquarium is not made to hold them.
- 9. C** — An apple grows on a tree, and a tomato grows on a vine, so each pair links a fruit to the plant that carries it. A stone is a hard rock, a shell covers an animal such as a snail, and a hive is a home for bees. None of those grows tomatoes, so vine is the only match.
- 10. B** — A wilted flower has lost its freshness, so wilted and fresh are opposites, and a rusty nail is the opposite of a shiny one. Metal is what rust grows on, not its opposite, brown describes the rust color, and heavy has nothing to do with rust. Shiny is the word that means the reverse of rusty.
- 11. A** — Pruning means cutting back a hedge so it stays neat, and mowing means cutting grass so a lawn stays short. Each action is done to a particular green thing. A rake is a tool and a shed is a building, so neither is cut, and the sun cannot be mowed, which leaves lawn as the match.
- 12. D** — A cactus is a plant that lives in a hot, dry desert, and seaweed is a plant that lives in the salty ocean. Each pair links a plant with its natural home. Seaweed does not grow among forest trees, on rocky mountain tops, or in a grassy meadow, because it needs salt water to stay alive.
- 13. C** — Fertilizer gives plants extra food so they grow strong, and vitamins give people extra nutrients so they stay healthy. Both pairs name a helper and the living thing it feeds. Stones and tools do not eat or grow, and clouds are only water in the sky, so none of them can be helped by vitamins.

14. A — Mulch is a layer that covers the soil to keep it moist, and a lid is a cover that fits on top of a pot. Both pairs show a covering and the thing it protects. A spoon stirs, a stove holds the pot, and water is held inside it, so none of them is covered by a lid.

15. D — A scarecrow is set up to keep crows away from crops, and a lock is set on a door to keep thieves out. Each item guards against an unwanted visitor. Doors and windows are what a lock is attached to, and keys open a lock, so those are not the ones it is meant to stop.

16. B — An orchard is a field where apple trees are grown, and a vineyard is a field where grape vines are grown. Each place is named for the main crop it grows. Pears grow in an orchard, wheat grows in a grain field, and melons grow in a melon patch, so grapes is the only crop that belongs in a vineyard.

17. A — Nectar is the sweet liquid made inside a flower, and sap is the sugary liquid that flows inside a tree. Each pair names a liquid and the plant that holds it. A pond holds water, a cloud holds rain, and a stone is solid, so none of them makes or carries sap like a tree does.

18. B — To germinate means a seed begins to sprout, and to hatch means an egg breaks open so a young animal comes out. Both words name how a life begins from its first form. A nest only holds eggs, a wing is a body part, and the sun gives warmth but does not hatch anything by itself. Egg is the match.

19. D — Fertile soil is full of life and grows many plants, while barren land grows nothing, so the two words are opposites. In the same way, busy means always working, and idle means doing nothing. Tired, loud, and crowded can describe a busy person or place, but none of them is the reverse of busy.

20. C — A drizzle is a light rain, and a downpour is a very heavy rain, so the second word is the stronger form of the first. A breeze is a gentle wind, and a gale is a very strong wind. Drizzle is rain, sunshine is not wind, and a puddle is water on the ground, so only gale fits.

21. C — Tulips that are thirsty need a drink, and a can filled at the tap is a watering can, so water is the action that fits. The clues are thirsty and can. Dad would not paint, count, or wrap the flowers just because they are thirsty, and none of those actions helps a plant that needs moisture.

22. B — Snails move on a layer of wet mucus, which leaves a shiny and slimy line behind them. The word shiny is the clue that points to a wet, slick trail. A trail cannot be noisy, because snails make no sound as they glide, and it is not spicy, which describes taste, or frozen in a garden.

23. A — Plants that get too much heat and too little water droop and go limp, which is what the word wilt means. The clue is hot sun. Tomato plants cannot sing, and they would freeze only in cold weather, not in heat. Floating is for things on water, so wilt is the only sensible choice.

24. D — Bees fly from flower to flower to drink nectar, the sweet liquid inside blossoms, which they turn into honey. The word sweet is the clue. Gravel is hard stone, smoke is a gas from fire, and paint is a coating, so none of them is sweet or found inside a flower for a bee to collect.

25. B — Rose stems are covered with thorns, which are pointy and can scratch bare hands, so gloves protect the gardener. Sharp is the clue word. Petals are soft, buds are closed flowers, and roots grow

underground where hands do not touch them, so none of those could scratch Ana while she trimmed the bush.

26. A — A drought is a long time without rain, and cracked ground means the soil has lost its water. Dry soil cannot help seeds become plants, so the field cannot grow crops. Nobody would wash, carry, or paint crops in a field just because the ground is dry, so grow is the word that makes sense.

27. D — Students who watch plants sprout often use a ruler to measure how tall each one gets, which tells them how fast it grows. The clue is how fast the sprouts rise each day. Forgetting or hiding the cups would stop the experiment, and wrapping them would block the light, so measure is the best choice.

28. C — Compost is made of rotting plant scraps, such as peels and leaves, and it gives soil nutrients so new plants grow well. The clue is feeds the garden soil. Glass and cement are hard building materials that would harm the garden, and soup is a food for people, so compost is the only match.

29. A — Rabbits love to nibble leafy plants, so a gardener builds a tall fence to keep them out of the lettuce patch. The fence is the clue that something must be kept away. Rabbits do not plant, paint, or count anything, so a fence would have no reason to stop those actions. Eating is what the fence prevents.

30. C — A trellis is a frame that helps a vine climb, so it must be strong enough to hold the plant's weight, which is what sturdy means. A slippery or melting support would let the vine fall, and a tiny support could not carry a long vine. The clue is hold onto, and only a firm frame can do that.

31. B — Plants that do not get enough sunlight stretch toward whatever light they can find, and their stems turn thin and weak. The clue is too little light. A strong or heavy stem would need plenty of sunshine to build, and a stem cannot be loud, so weak is the only word that fits the sentence.

32. D — Weeds are unwanted plants that grow fast and take space, water, and light from the plants a gardener wants. The clue is crowding out his carrots. Pots, gloves, and rakes are gardening items that do not grow in the ground, so they could not crowd the carrots, and he would not pull them up.

33. B — A cactus has a thick, fleshy stem that holds water for the long dry stretches between rains, which is how it lives in the desert. Petals are the colorful flower parts, pollen is the dust that helps flowers make seeds, and thorns are sharp spines that guard the plant. None of those store water, so stem is correct.

34. A — Fragile means easy to break, and young tomato plants have thin, soft stems that a strong wind can snap. The clue is snap. Sturdy is the opposite, because a sturdy plant would stand firm. Baby plants are not ancient or enormous, since those words mean very old and very large, so fragile fits best.

35. C — A gardener touches the soil to learn whether the plants need a drink, and soil that has become dry is ready for water. The clue is needed water. Muddy soil is already soaked, frozen soil would not take water in summer, and rich soil is full of nutrients, which has nothing to do with needing water.

36. D — Soft, steady rain soaks into dry soil and helps plants flower, so the first pair makes sense in both blanks. The pair with shrink fails because rain does not make a garden shrink. Scorching and dusty do not describe rain, which is wet and cool. Only the first pair works in both spots.

37. B — Each crop takes certain nutrients from the soil, so growing the same plant in the same place for years leaves the ground weak, and moving crops helps it recover. The clue is the soil does not lose. Soil color, noise, and shadows are not what plants need, so nutrients is the best choice.

38. C — Someone who checks every tree each morning is being careful, which means paying close attention so nothing goes wrong. The clue is every tree and each morning. A careless or lazy person would skip the checks, and a sleepy person would not likely finish them, so only careful matches her behavior.

39. A — Anxious means worried about what might happen, and a farmer who knows a frost can ruin the crop would feel that way. The clue is could ruin the whole crop. Delighted, bored, and amused describe happy or uninterested moods, which do not fit someone who is facing the loss of a season's work.

40. D — Dormant means resting for a time, which describes bulbs that stay quiet in cold ground and then grow when it warms. The clue is woke in spring. Extinct means gone forever, ruined means damaged beyond use, and hollow means empty inside, so none of them could describe bulbs that later come back to life.

41. A — Daisy, tulip, and rose are all flowers that people grow for their blooms. A lily is a flower too. A shovel and a bucket are garden tools, not plants, and soil is the ground that plants grow in, so none of those three is a flower that belongs with the group.

42. C — A rake, a hoe, and a trowel are hand tools that gardeners use to work the soil, and a shovel is another one. A seed and a petal are plant parts, and a worm is an animal that lives in the dirt. None of those is a tool, so shovel is the only choice that belongs.

43. B — Oak, maple, and pine are all trees with tall wooden trunks. A birch is a tree as well. A tulip is a small flower, grass is a low green plant that covers the ground, and ivy is a vine that climbs, so none of those is a tree that matches the three.

44. D — Carrot, beet, and radish are root vegetables, which means we eat the part that grows underground. A turnip grows the same way underground. Lettuce is a leafy plant eaten above ground, peas grow in pods, and corn grows on a tall stalk, so none of those is a root vegetable.

45. D — Moth, wasp, and cricket are insects, which have six legs and three body parts. A ladybug is a small beetle, so it is an insect too. A spider has eight legs, a worm has no legs, and a snail has a soft body and a shell, so none of them is an insect.

46. A — Basil, mint, and parsley are herbs, which are leafy plants used to add flavor to food. Thyme is an herb too. A potato is a root vegetable, a cherry is a fruit, and a maple is a tree, so none of them is a small leafy plant used for flavoring.

47. C — Pond, creek, and stream are all bodies of water that people can find outdoors. A river is a larger body of moving water, so it belongs. A hill is a high piece of land, a meadow is an open grassy field, and a hedge is a row of bushes, so none of them holds water.

48. B — Petal, stem, and leaf are all parts of a plant. A root is another plant part that grows under the soil and drinks water. A bee is an insect that only visits plants, a hose carries water, and a bucket holds things, so none of them is part of the plant itself.

49. B — Pear, cherry, and apricot are fruits that grow on trees, and a plum also grows on a tree. An onion grows from a bulb underground, a bean grows in a pod on a vine or bush, and celery is a stalk vegetable, so none of those is a tree fruit.

50. C — Summer, autumn, and winter are seasons of the year, and spring is the fourth season. Morning is a part of the day, a calendar is a chart that shows dates, and weather is what the sky and air are like at a moment, so none of them is a season.

51. A — Soil, sand, and clay are all materials that make up the ground, and gravel is made of small stones, so it is ground material too. Rain falls from clouds, a root is part of a plant, and a seed is what a plant grows from, so none of them is something the ground is made of.

52. D — A tadpole, a caterpillar, and a chick are all young animals that will grow into frogs, butterflies, and hens. A kitten is a young cat, so it belongs. A whisker is a body part, a burrow is a hole where an animal lives, and a barn is a building, so none of them is a young animal.

53. C — Lettuce, spinach, and cabbage are leafy vegetables, which means we eat their leaves. Kale is a leafy vegetable too. A potato grows underground, a pumpkin is a big round vegetable that grows on a vine, and an onion grows as a bulb, so none of them is eaten for its leaves.

54. B — Robin, sparrow, and finch are small birds that often visit gardens, and a wren is another small bird with feathers. A bat flies but is a furry mammal, a moth is an insect, and a frog is an amphibian that lives near water, so none of them is a bird.

55. A — Pumpkin, squash, and cucumber are all plants in the gourd family that grow on long, trailing vines and carry their seeds inside. A melon grows the same way on the ground. Carrot and onion grow underground, and celery grows as a tall stalk, so none of them grows on a trailing vine.

56. D — Sunlight, water, and air are things that plants need in order to live and grow, and soil also gives plants roots a place to hold and food to drink. A rake is only a tool, a bee is an insect that visits flowers, and a fence is a barrier, so none of them is a need.

57. C — Pollinate, sprout, and bloom are all things that plants do as they grow, and a fruit ripens when it is ready to eat. Swim and hatch are things animals do, and bark is what a dog does or the covering on a tree trunk, so none of them is a step in a plant's growth.

58. D — Damp, moist, and soggy all describe something that has water in it, and humid describes air that is full of water. Parched means very dry, and brittle and dusty describe dry things that snap or crumble, so those three words mean the opposite of wet and do not belong with the others.

59. A — A bulb, a tuber, and a seed are all things that can be planted to grow a new plant, and a cutting is a piece of stem planted the same way. A flower and a fruit are parts that come later, and a pebble is a stone that cannot grow, so none of them starts a new plant.

60. B — In $14 : 21$ and $30 : 37$, the second number is 7 more than the first, since 14 plus 7 is 21 and 30 plus 7 is 37. Adding 7 to 52 gives 59. The choice 58 adds only 6 and 60 adds 8, so each breaks the rule. The choice 104 doubles 52.

61. C — Each pair adds 8 to its first number, because 23 plus 8 is 31 and 45 plus 8 is 53. Applying the same step to 67 gives 75. The choice 74 adds just 7 and 76 adds 9, so neither matches the rule. The choice 134 doubles 67, but doubling 23 would give 46, not 31.

62. A — In $9 : 3$ and $21 : 15$, the second number is 6 less than the first, since 9 minus 6 is 3 and 21 minus 6 is 15. Taking 6 from 40 leaves 34. The choice 33 subtracts 7 and 35 subtracts 5, so each is off. The choice 46 adds 6, which goes the wrong way.

63. B — The second number in each pair is 5 times the first, since 3 times 5 is 15 and 8 times 5 is 40. Multiplying 9 by 5 gives 45. The choice 54 multiplies by 6, and 36 multiplies by 4, so each uses the wrong factor. The choice 29 adds 20 to 9, which would not turn 3 into 15.

64. D — Each pair multiplies by 7, because 6 times 7 is 42 and 8 times 7 is 56. Multiplying 11 by 7 gives 77. The choice 66 multiplies by 6, and 88 multiplies by 8, so both use the wrong factor. The choice 18 adds 7 to 11, but adding 7 to 6 would give 13, not 42.

65. B — The second number in each pair is the first divided by 8, since 56 divided by 8 is 7 and 72 divided by 8 is 9. Dividing 96 by 8 gives 12. The choice 88 subtracts 8, and 104 adds 8, so they use the wrong operation. The choice 16 divides by 6, so 56 would not give 7.

66. A — Each pair triples the first number, because 15 times 3 is 45 and 12 times 3 is 36. Tripling 17 gives 51. The choice 34 doubles 17 and so uses the wrong factor. The choice 20 adds 3, which would turn 15 into 18, not 45. The choice 48 is three less than the true product.

67. C — In $38 : 25$ and $61 : 48$, the second number is 13 less than the first, since 38 minus 13 is 25 and 61 minus 13 is 48. Subtracting 13 from 74 gives 61. The choice 87 adds 13 and goes the wrong way. The choices 60 and 62 subtract 14 and 12, so each misses by one.

68. D — Each pair multiplies by 6, since 9 times 6 is 54 and 12 times 6 is 72. Multiplying 15 by 6 gives 90. The choice 84 is only 14 times 6, and 96 is 16 times 6, so neither comes from 15. The choice 75 multiplies 15 by 5, which would not turn 9 into 54.

69. B — The second number is the first divided by 7, since 63 divided by 7 is 9 and 49 divided by 7 is 7. Dividing 35 by 7 gives 5. The choice 28 subtracts 7 and 42 adds 7, so both use the wrong operation. The choice 7 divides by 5, which would make 63 become 12 and not 9.

70. D — In both pairs the second number is 23 more than the first, because 17 plus 23 is 40 and 26 plus 23 is 49. Adding 23 to 38 gives 61. The choices 60 and 62 add 22 and 24, so each is one step away. The choice 76 doubles 38, but doubling 17 gives 34, not 40.

71. C — The rule has two steps: double the first number, then add 1, since 5 doubled is 10 plus 1 is 11, and 9 doubled is 18 plus 1 is 19. For 13, doubling gives 26 and adding 1 gives 27. The choice 26 skips the add, and 28 adds 2. The choice 39 triples 13.

72. A — The rule is to triple the first number and then subtract 1, since 5 times 3 is 15 minus 1 is 14, and 8 times 3 is 24 minus 1 is 23. For 10, tripling gives 30 and subtracting 1 gives 29. The choice 30 forgets the subtraction, 28 subtracts 2, and 31 adds 1.

73. D — The rule is to double the first number and then add 3, because 6 doubled is 12 plus 3 is 15, and 11 doubled is 22 plus 3 is 25. For 14, doubling gives 28 and adding 3 gives 31. The choice 28 leaves out the add, 17 only adds 3, and 29 adds just 1.

74. C — The rule is to halve the first number and then add 3, since half of 16 is 8 plus 3 is 11, and half of 30 is 15 plus 3 is 18. For 24, half is 12 and adding 3 gives 15. The choice 12 forgets the add, 27 adds 3 without halving, and 14 adds only 2.

75. B — The second number is the first multiplied by itself, since 6 times 6 is 36 and 8 times 8 is 64. For 12, 12 times 12 is 144. The choice 24 only doubles 12, the choice 132 is 12 times 11, and 156 is 12 times 13, so those products use a different partner than 12 itself.

76. A — The rule subtracts 5 and then doubles, because 13 minus 5 is 8 and doubled is 16, and 20 minus 5 is 15 and doubled is 30. For 31, 31 minus 5 is 26 and doubled is 52. The choice 26 skips the doubling, 36 adds 5 instead, and 62 doubles without subtracting.

77. C — The rule divides by 4 and then adds 9, since 28 divided by 4 is 7 plus 9 is 16, and 44 divided by 4 is 11 plus 9 is 20. For 60, dividing gives 15 and adding 9 gives 24. The choice 15 skips the add, and 69 adds 9 without dividing. The choice 33 adds 18.

78. B — The rule multiplies the first number by itself and then subtracts the first number, since 5 times 5 is 25 minus 5 is 20, and 7 times 7 is 49 minus 7 is 42. For 9, 81 minus 9 is 72. The choice 81 stops before subtracting. The choices 18 and 63 use other factors.

79. A — The rule multiplies by 5 and then subtracts 4, since 6 times 5 is 30 minus 4 is 26, and 9 times 5 is 45 minus 4 is 41. For 12, 60 minus 4 is 56. The choice 60 skips the subtraction, 52 subtracts 8, and 64 adds 4, so none of them follows the rule.

80. D — The blank is added to 38 to make 91, so subtract 38 from 91 to find it. Ninety-one minus 38 is 53, and 53 plus 38 checks to 91. The choice 129 adds 38 and 91 instead of undoing the addition. The choice 43 is 10 too small, and 54 is 1 too large, so neither works.

81. A — The blank is the amount taken away from 85 to leave 49, so find it by subtracting 49 from 85, which gives 36. Checking, 85 minus 36 is 49. The choice 134 adds 85 and 49, the wrong operation. The choice 46 is 10 too big, and 35 is 1 too small, so neither makes 49.

82. D — The blank minus 29 leaves 54, so add 29 back to 54 to undo the subtraction. Fifty-four plus 29 is 83, and 83 minus 29 is 54. The choice 25 subtracts 29 from 54, which uses the wrong operation. The choice 73 is 10 too small, and 82 is 1 too small, so neither leaves 54.

83. B — Fourteen times the blank makes 182, so divide 182 by 14 to find it, and 182 divided by 14 is 13. Checking, 14 times 13 is 182. The choice 168 subtracts 14 from 182, and 196 adds 14, so both use the wrong operation. The choice 14 is one group too many, since 14 times 14 is 196.

84. C — Taking 6 away from 15 leaves 9, so minus is the sign that makes the equation true. Adding gives 15 plus 6, which is 21. Multiplying gives 15 times 6, which is 90. Dividing gives 15 divided by 6, which is not a whole number and is far from 9, so only minus works.

85. D — A number divided by 9 gives 6, so multiply 6 by 9 to undo the division, and 6 times 9 is 54. The choice 15 adds 9 and 6, which is the wrong operation. The choice 63 is 7 times 9, one group too many, and 45 is 5 times 9, one group too few.

86. C — The blank is the number that 84 is split by to give 7, so divide 84 by 7 to find it, which gives 12. Checking, 84 divided by 12 is 7. The choice 77 subtracts 7 from 84, and 91 adds 7, so both use the wrong operation. The choice 11 would give a result larger than 7.

87. A — Two equal numbers add to 126, so each is half of 126, which is 63. Checking, 63 plus 63 is 126. The choice 126 uses the whole total for each blank, which would add to 252. The choices 62 and 64 are one less and one more than 63, so they make 124 and 128.

88. B — Six groups of 14 make 84, so times is the sign that works. Adding gives 6 plus 14, which is only 20. Subtracting gives 6 minus 14, which is below zero. Dividing gives 6 divided by 14, which is less than 1, so none of the other three signs can reach 84.

89. A — A number multiplied by itself makes 289, and 17 times 17 is 289, so the blank is 17. The choice 34 is double 17, and 34 times 34 is far too large at 1,156. The choice 16 makes only 256, and 18 makes 324, which is too large. Only 17 works.

90. B — First take away the 7 added at the end, since 61 minus 7 is 54, then divide by 6 to get 9. Checking, 6 times 9 is 54 and 54 plus 7 is 61. The choice 54 stops after one step. The choice 8 gives 55, and 11 gives 73, so they fail the check.

91. D — Undo the subtraction first by adding 15 to 37, which gives 52, then undo the multiplication by dividing by 4 to get 13. Checking, 13 times 4 is 52 and 52 minus 15 is 37. The choice 52 stops after one step. The choice 12 gives 33, and 14 gives 41.

92. C — Splitting 96 into groups of 8 gives 12, so divided by is the right sign, because 8 times 12 is 96. Adding gives 104 and subtracting gives 88, which are both far from 12. Multiplying gives 768, which is much larger, so only division works, as 96 divided by 8 is exactly 12.

93. D — Three equal numbers add to 69, so divide 69 by 3 to find each one, and the answer is 23. Checking, 23 plus 23 plus 23 is 69. The choice 22 makes 66, and 24 makes 72, so each misses the total. The choice 17 is about one quarter of 69 and makes only 51.

94. C — Multiplication comes first, so 4 times the blank is what is taken from 70 to leave 38. That amount is 70 minus 38, which is 32, and 32 divided by 4 is 8. The choice 32 is the product, not the blank. The choice 7 makes 42, and 10 makes 30.

95. B — Take away the 15 first, since 22 minus 15 is 7, then undo the division by multiplying 7 by 4 to get 28. Checking, 28 divided by 4 is 7, and 7 plus 15 is 22. The choice 7 stops after one step. The choice 88 multiplies 22 by 4, and 29 is one too big.

96. A — Undo the addition first, since 75 minus 12 is 63, then divide by 7 to find 9. Checking, 7 times 9 is 63 and 63 plus 12 is 75. The choice 63 is the answer to only the first step. The choice 12 gives 96, and 10 gives 82, so they pass the check.

97. D — Add 20 back to 60 to undo the subtraction, which gives 80, then divide by 8 to get 10. Checking, 10 times 8 is 80 and 80 minus 20 is 60. The choice 80 is only the middle step. The choice 9 gives 52, and 8 gives 44, so both miss 60.

98. B — Try the number 5, since 5 times 5 is 25 and 25 plus 5 is 30, so it works. The choice 6 gives 36 plus 6, which is 42. The choice 4 gives 16 plus 4, which is 20, and 7 gives 49 plus 7, which is 56. Only 5 makes 30.

99. C — Each number is 6 more than the one before it, since 34 plus 6 is 40, then 46, then 52. Adding 6 to 52 gives 58. The choice 57 adds only 5, and 59 adds 7, so each breaks the steady pattern. The choice 64 adds 12, which jumps over a number in the list.

100. A — Each number is 9 less than the one before it, since 91 minus 9 is 82, then 73, then 64. Subtracting 9 from 64 gives 55. The choice 54 subtracts 10, and 56 subtracts only 8, so each breaks the pattern. The choice 46 drops by 18, which skips a number.

101. A — Each number is 14 more than the one before it, since 17 plus 14 is 31, then 45, then 59. Adding 14 to 59 gives 73. The choice 72 adds 13, and 74 adds 15, so each breaks the steady pattern. The choice 76 adds 17, which is the first number and not the step.

102. C — Each number is 13 less than the one before it, since 100 minus 13 is 87, then 74, then 61. Subtracting 13 from 61 gives 48. The choice 47 subtracts 14, and 49 subtracts 12, so each breaks the pattern. The choice 35 drops by 26, which is two steps at once.

103. D — Each number is 3 times the one before it, since 12 times 3 is 36, then 108, then 324. Tripling 324 gives 972. The choice 648 doubles 324, and 432 adds 108, so both use a different rule. The choice 970 is close to 972 but is not 324 times 3, so it fails.

104. B — Each number is half of the one before it, since 1760 divided by 2 is 880, then 440, then 220. Half of 220 is 110. The choice 55 halves twice, and 130 and 100 take away 90 and 120 instead of halving. Only 110 keeps the repeated halving that the list follows.

105. A — The jumps grow by 1 each time: 1, 2, 3, then 4, since 15 plus 1 is 16, then 18, then 21, then 25. The next jump is 5, and 25 plus 5 is 30. The choice 29 repeats a jump of 4, and 31 uses a jump of 6, which skips one. The choice 35 adds 10.

106. B — The jumps grow by 2 each time: 1, 3, 5, then 7, since 7 plus 1 is 8, then 11, then 16, then 23. The next jump is 9, and 23 plus 9 is 32. The choice 30 repeats a jump of 7, and 31 uses a jump of 8, which skips an odd step. The choice 39 jumps 16.

107. C — Each number is double the one before it plus 1, since 9 doubled is 18 plus 1 is 19, then 39, then 79. Doubling 79 gives 158 and adding 1 gives 159. The choice 158 forgets to add 1, and 160 adds 2. The choice 119 adds 40, which is the last jump and not the rule.

108. D — The pattern alternates between adding 15 and subtracting 17: 20 plus 15 is 35, minus 17 is 18, plus 15 is 33, and minus 17 is 16. The next step is plus 15, so 16 plus 15 is 31. The choice 14 subtracts 2, 32 adds 16, and 29 subtracts 2 from 31.

109. B — Two patterns are woven together. The numbers in the 1st, 3rd, and 5th places go 7, 11, 15, adding 4 each time, and the others go 50, 46, 42, subtracting 4. The next number is in the first pattern, so 15 plus 4 is 19. The choice 38 continues the second pattern, and 23 and 18 miss by one step.

110. C — Two patterns are woven together. The numbers in the 1st, 3rd, and 5th places go 80, 70, 60, dropping 10 each time, and the others go 5, 8, 11, rising by 3. The next number belongs to the first pattern, so 60 minus 10 is 50. The choice 14 continues the second pattern, and 40 and 52 miss.

111. D — Each number is double the one before it minus 1, since 6 doubled is 12 minus 1 is 11, then 21, then 41, then 81. Doubling 81 gives 162, and subtracting 1 gives 161. The choice 162 forgets to subtract, and 160 subtracts 2. The choice 121 adds 40, which is the last jump.

112. A — Each number is one third of the one before it, since 1944 divided by 3 is 648, then 216, then 72. Dividing 72 by 3 gives 24. The choice 48 is two thirds of 72, the choice 8 divides by 9, and 36 is half of 72, so none follows the pattern of dividing by 3.

113. C — The jumps grow by 3 each time: 3, 6, 9, then 12, since 8 plus 3 is 11, then 17, then 26, then 38. The next jump is 15, and 38 plus 15 is 53. The choice 50 adds 12 again, and 52 adds 14, which is not a multiple of 3. The choice 41 adds only 3.

114. B — The numbers drop by a larger even amount each time: 2, 4, 6, then 8, since 90 minus 2 is 88, then 84, then 78, then 70. The next drop is 10, and 70 minus 10 is 60. The choice 62 repeats a drop of 8, and 61 drops 9, which is odd. The choice 50 drops 20.

115. A — The pattern alternates between doubling and subtracting 5: 6 doubled is 12, minus 5 is 7, doubled is 14, minus 5 is 9. The next step is doubling, so 9 doubled is 18. The choice 13 adds 4 and 4 subtracts 5, which is the wrong step, and 23 adds 14, which does not follow the cycle.

116. D — The pattern alternates between adding 5 and doubling: 3 plus 5 is 8, doubled is 16, plus 5 is 21, doubled is 42, and plus 5 is 47. The next step is doubling, so 47 doubled is 94. The choice 52 adds 5 again, 89 subtracts 5 from 94, and 98 adds 4 to the answer.

117. C — Each number is the sum of the two before it, since 4 plus 5 is 9, 5 plus 9 is 14, 9 plus 14 is 23, and 14 plus 23 is 37. The next number is 23 plus 37, which is 60. The choice 51 adds 14, and 74 doubles 37.

118. A — The jumps double each time: 2, 4, 8, 16, since 13 plus 2 is 15, then 19, then 27, then 43. The next jump is 32, and 43 plus 32 is 75. The choice 59 repeats the jump of 16, and 74 uses a jump of 31. The choice 86 doubles 43, which does not follow the jumps.

119. B — In the top row, the triangle stays black but grows from small to large. The same change applied to the small white heart gives a large white heart. The small white heart would mean nothing

grew, the large black heart changes the shade by mistake, and the large white triangle changes the shape. Only size should change.

120. D — In the top row, one more circle is added, going from two to three, while the shade stays grey. The bottom row should also gain one shape, so four black squares become five black squares. Six adds two shapes, five grey squares changes the shade, and three black squares takes one shape away.

121. A — In the top row, the arrow turns one quarter turn clockwise, from down to left. A quarter turn clockwise from left points up. Pointing right would be a half turn, pointing down would be a quarter turn the other way, and pointing left means no turn happened, so only up follows the same rule.

122. D — In the top row, the dot moves from above the shape to below it, and the shape does not change. The same move gives a dot below a grey circle. The dot above would mean no move, the dot inside is a position never used, and the grey square changes the shape by mistake.

123. C — In the top row, the triangle has three sides and the square has four, so each step adds one side while the shade stays the same. A pentagon has five sides, so the next shape is a hexagon with six, staying grey. The square takes a side away, the heptagon adds two, and the white hexagon changes the shade.

124. B — Across the top row, one more shape is added at each step. The bottom row follows that rule, so after two and three white stars comes four white stars. Five stars skips a number, four black stars changes the shade, and four white circles changes the shape. The shapes and shade should stay the same.

125. D — In the top row, the circle gets darker at each step, from white to grey to black, The hexagon should get darker in the same way, so black comes next. A white hexagon starts the cycle over, the black circle changes the shape, and the striped hexagon uses a shade never seen in the top row.

126. A — The top row shows the square growing from small to medium to large with no change in shade. The black diamond should grow the same way, so a large black diamond comes next. Small repeats the first step, the white diamond changes the shade, and the black square changes the shape.

127. B — In the top row, the line turns a quarter turn clockwise at each step, from up to right to down. The bottom row begins with left, then up, so the next quarter turn clockwise points right. Down would be a half turn, left goes back to the start, and up repeats the middle figure.

128. C — In the top row, the third figure combines the first two figures into one. Putting the two slanted lines together makes an X. The plus sign is made from straight lines, not slanted ones. The single vertical line uses neither slanted line, and the V shape joins the lines at a point instead of crossing them.

129. A — Each row holds one shape in the three shades, white, grey, and black, with each shade used once. The bottom row has a black triangle and a white triangle, so a grey triangle must complete it. Black and white triangles would repeat a shade already in the row, and the grey square belongs to the middle row.

130. C — Every row goes up by two shapes at each step, from one to three to five, and the shape and shade stay the same inside a row. The grey crosses should reach five. Four breaks the step of two, five black crosses uses a shade from the middle row, and five grey moons uses the middle row shape.

131. B — In every row, the arrow turns a quarter turn clockwise at each step. The bottom row goes from down to left, so the next quarter turn clockwise points up. Pointing right is a half turn from left, pointing down repeats the first figure, and pointing left repeats the second figure, so each of them breaks the pattern.

132. D — Each row shrinks from large to medium to small, while the shape and shade stay the same inside a row. The black pentagons should end with a small one. A large pentagon would start the cycle over, a grey pentagon changes the shade, and a small black circle belongs to the shape of the middle row.

133. C — The dot moves one corner clockwise at each step: top-left, top-right, bottom-right, bottom-left, then back to top-left. The bottom row has already shown bottom-right and bottom-left, so the next corner is top-left. The other three corners repeat spots just used or skip the correct order of the clockwise path, so each of them fails.

134. B — The shade is the same across a row and gets darker down the grid, while each column keeps one shape: circle, square, then triangle. The missing figure is in the triangle column and the black row, so it is a black triangle. A grey or white triangle uses the wrong row shade, and the black circle repeats the first column.

135. D — In every row, two shapes are taken away at each step, and the shape stays the same inside a row. After nine and seven stars comes five stars. Three stars would take away four, five small circles uses the top row shape, and six stars takes away only one, so none of them follows the rule of two.

136. A — In each row, the third figure puts the second figure inside the first one, keeping both shades and shapes. So the large white triangle holds the small black triangle. The small triangle alone leaves out the first figure, swapping the shades does not match the rows, and a small black circle changes the shape.

137. C — The same three figures appear in each row in a repeating order, and each row starts one place later. The bottom row has a grey triangle and a white circle, so the black square must come next. A white or grey square changes the shade, since the square is always black here, and the black circle changes the shape.

138. A — In each row, the third figure joins the black parts of the first two, so two matching halves make a whole black shape. The top and bottom halves of the hexagon together fill it, giving a fully black hexagon. A white hexagon shows no black, a black top half shows only the first figure, and grey is never used.

139. B — One fold makes two layers of paper, so the single punch goes through both layers and leaves two holes. One hole would count only the punch, three holes does not match any number of layers made by one fold, and four holes would need four layers, which would take two folds, not one.

140. D — One fold makes two layers, so each punch leaves two holes, and three punches leave 3 times 2, which is 6 holes. Three holes counts only the punches and ignores the second layer. Five holes adds the numbers instead of multiplying them, and nine holes would need three layers, which one fold cannot make.

141. C — Folding a strip into three parts makes three layers, so the punch goes through three pieces of paper and leaves three holes when the strip is opened. One hole counts only the punch, two holes would match a single fold with two layers, and six holes would need six layers, which this fold does not make.

142. A — Two folds in half make four layers, and the punch goes through every layer, so the opened sheet shows four holes. One hole counts only the punch, and two holes matches only one fold. Eight holes would need eight layers, which takes three folds, and this paper was folded only twice.

143. D — Two folds in half make four layers, so each punch leaves four holes, and two punches leave 2 times 4, which is 8 holes. Four holes counts only the layers once, six holes adds the numbers instead of multiplying them, and two holes counts only the punches, ignoring the layers completely.

144. B — A fan fold into five equal parts makes five layers, so each punch leaves five holes, and two punches leave 2 times 5, which is 10 holes. Seven holes adds the numbers instead of multiplying them, five holes counts the layers for only one punch, and eight holes would suit four layers with two punches.

145. D — Three folds in half double the layers each time, so one fold gives two layers, two folds give four, and three folds give eight. The single punch goes through all eight, leaving eight holes. Three holes counts only the folds, four holes matches two folds, and six holes does not equal any number of layers made by folding in half.

146. A — Folding in half makes two layers, and folding those into thirds makes three times as many, which is 2 times 3, or six layers. The punch goes through all six, so the opened sheet shows six holes. Five holes adds the numbers instead of multiplying them, three holes counts only the thirds, and nine holes would need nine layers.

147. B — The first punch went through two layers, leaving two holes, and the second punch went through four layers, leaving four more. Together that is 2 plus 4, which is 6 holes. Four holes counts only the second punch, five holes gives the first punch just one hole, and eight holes counts the first punch as four.

148. C — The fold copies the punch across the middle crease, so one hole becomes two. The hole was near the top and the outer edge, so each side edge gets one hole near the top. Holes near the crease would sit in the middle, one hole ignores the second layer, and holes near the bottom ignore the top.

149. B — A hole near the crease is copied across it, so it becomes two holes close to the middle line, one on each side. The hole was low on the paper, so both are low down. Holes at the corners are far from the crease, holes high up ignore the position, and a single hole forgets the second layer.

150. D — A hole close to the crease is copied across it, so one hole lands just above the crease line and one lands just below it, in the middle from side to side. Two holes on one side would not be mirrored, holes at the top and bottom edges are far from the crease, and one hole ignores the second layer.

151. A — Folding corner to corner places two corners of the square on top of each other at the right-angle corner. A punch there makes a hole near each, and those corners lie at opposite ends of the fold line, so they are opposite corners. Neighboring corners never meet, one hole forgets a layer, and the middle is far away.

152. C — The two creases cross at the center of the sheet, so a hole near that corner is copied into all four quarters, close to the center. Holes near the corners would come from a punch near the outer corner, two holes would come from only one fold, and one hole at the center forgets the layers.

153. C — The corner farthest from the creases is a corner of the sheet, and the two folds copy that hole into all four quarters, so each corner of the sheet gets one. Holes near the center would come from the other corner, a row across the middle ignores the mirror pattern, and two holes leaves out half the layers.

154. A — The right-hand edge of the small square is a side edge of the sheet. Mirroring the hole across the top-to-bottom crease gives two holes on the right edge, and mirroring across the left-to-right crease gives two on the left. Holes along the top and bottom or at the center do not match, and two holes leaves out half the layers.

155. D — Two folds make four layers, so each punch leaves four holes, and three punches leave 3 times 4, which is 12 holes. Seven holes adds the numbers instead of multiplying them, eight holes uses only two punches, and sixteen holes would need four punches or sixteen layers, which this paper does not have.

156. B — A fan fold into seven equal parts makes seven layers, so each punch leaves seven holes, and two punches leave 2 times 7, which is 14 holes. Nine holes adds the numbers instead of multiplying them, seven holes counts the layers for only one punch, and twelve holes would suit six layers with two punches.

157. B — Each punch goes through four layers, so each leaves four holes. The two punches together leave 2 times 4, which is 8 holes, four near the center and four near the corners. Four holes counts only one punch, six holes adds the numbers incorrectly, and two holes counts only the punches without the layers.

158. A — The shades change from white to black to striped, but every figure is a circle, so the shared feature is the circle shape. A grey circle has it. The grey square, grey triangle, and grey star all use shapes that never appear in the first three figures, so each of them fails.

159. C — The shapes change from square to star to heart, but all three figures are black, so the shared feature is the shade. A black moon has it. The white moon, grey moon, and striped moon all use a shade that never appears in the first three figures, so each of them fails.

160. D — The shapes and shades change, but every figure is small, so the shared feature is the size. A small striped circle has it. The large, medium, and huge striped circles are each a bigger size than the first three, so none of them matches even though the stripes look new.

161. B — The shapes and shades change, but each figure holds exactly two dots inside it. A striped heart with two dots inside has that feature. The heart with one dot has too few, the heart with three dots has too many, and the heart with two dots outside places them in the wrong spot.

162. C — A triangle, a rectangle, and a pentagon are made only of straight sides, so the shared feature is having no curves. A hexagon also has only straight sides. The circle and the oval are round all the way, and the heart has curved lobes at the top, so each of them has curves.

163. A — The shapes and shades change, but every figure has exactly three stripes. A heart with three stripes has that count. The hearts with two, four, and five stripes each have a different number, so none of them is like the first three, whatever the shade or size of the heart is.

164. D — The shades change, but every arrow points up, so the shared feature is the direction. A striped arrow pointing up has that feature. The striped arrows pointing down, left, and right each turn the other way, so they differ from the first three, even though the stripes are a new shade.

165. C — In each figure, a small white shape sits on top of a large black shape. A small white star on a large black circle has that setup. Swapping the shades or the sizes breaks it, and placing the star beside the circle instead of on top changes the position, so those three do not match.

166. D — The shapes and shades change, but every figure shows exactly three shapes in a row. Three striped stars in a row has that count. The rows of two, four, and five stars each hold a different number of shapes, so none of them is like the first three, even though each also forms a row.

167. A — Each figure is divided by exactly one straight line through the middle, even though the shapes and shades change. A star split by one line has that feature. The star with no line is not divided, two lines would divide it into more parts, and a dot is a different mark from a line.

168. B — The shapes change, but each figure is black on its right half and white on its left half. A hexagon with its right half black has that split. The left half black reverses the sides, the bottom half black turns the split sideways, and the all-black hexagon has no white at all.

169. B — Every figure has a round hole in the center of the shape, whatever its shade. A striped star with a round hole in its middle has that feature. A hole near one point is off center, a dot in the middle fills the space instead of leaving a hole, and the star with no hole has none.

170. C — The shapes and shades change, but every figure is taller than it is wide, which gives it a thin, upright look. A tall, narrow hexagon has that form. The short, wide hexagon and short, wide oval are wider than tall, and the small round circle is as wide as it is tall, so each of them is different.

171. A — Each figure holds a smaller copy of its own shape inside it, in the same shade. A large star holding a small star matches this. A small circle inside the star changes the inner shape, a small star beside the star is outside it, and two large stars side by side has no smaller copy.

172. D — Each row has four shapes whose shades take turns, white then black, starting with white. The row of four stars with the same turns matches. All white has no turns, white, white, black, black pairs the shades, and the row of three stars has only three shapes, so each of them breaks the pattern.

173. A — Each figure is cut into four parts, and exactly two parts are black while two are white. The rectangle with two black parts has that mix. The rectangles with one, three, or no black parts have a different number of black parts, so each of them fails even though they are cut into four parts too.

174. C — In each figure, the number of dots equals the number of sides, since a triangle has three sides, a square has four, and a pentagon has five. A hexagon has six sides, so it needs six dots. The hexagon with five or seven dots has too few or too many, and the square has the wrong count.

175. D — In each figure, there are twice as many white shapes as black ones, a 2 to 1 ratio. Eight white with four black keeps that ratio. Eight white with two black is a ratio of four to one, six with six is an even split, and nine white with three black is a ratio of three to one.

176. B — Each figure has exactly one more dot than lines, since two dots go with one line, three dots with two lines, and four dots with three lines. Five dots with four lines keeps that gap of one. Five and five has no gap, four and five has more lines than dots, and six and four has a gap of two.