

PRACTICE EXAM 4: 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. Spoon is to soup as fork is to ____.

- A. juice
- B. milk
- C. pasta
- D. tea

2. Oven is to bake as freezer is to ____.

- A. boil
- B. freeze
- C. fry
- D. toast

3. Egg is to shell as banana is to ____.

- A. slice
- B. bowl
- C. seed
- D. peel

4. Knife is to cut as blender is to ____.

- A. mix
- B. cool
- C. bake
- D. wash

5. Chef is to kitchen as farmer is to ____.

- A. bakery
- B. store
- C. farm
- D. cafe

6. Grapes are to bunch as eggs are to ____.

- A. pinch
- B. dozen
- C. slice
- D. sip

7. Sour is to lemon as sweet is to ____.

- A. salt
- B. pepper
- C. lime
- D. honey

8. Wheat is to flour as grapes are to ____.

- A. cheese
- B. juice
- C. butter
- D. bread

9. Stir is to spoon as spread is to ____.

- A. knife
- B. plate
- C. toast
- D. jam

10. Baker is to bread as butcher is to ____.

- A. cake
- B. soup
- C. rice
- D. meat

11. Whisk is to eggs as grater is to ____.

- A. milk
- B. soup
- C. cheese
- D. juice

12. Cookbook is to recipes as dictionary is to ____.

- A. words

- B. covers
- C. shelves
- D. stories

13. Dough is to bread as batter is to ____.

- A. flour
- B. cake
- C. oven
- D. butter

14. Microwave is to fast as slow cooker is to ____.

- A. quick
- B. loud
- C. slow
- D. cold

15. Simmer is to boil as walk is to ____.

- A. run
- B. sit
- C. stop
- D. stand

16. Famished is to hungry as freezing is to ____.

- A. warm
- B. spicy
- C. tasty
- D. cold

17. Recipe is to cook as map is to ____.

- A. street
- B. traveler
- C. page
- D. paper

18. Slice is to pizza as sip is to ____.

- A. napkin
- B. table
- C. plate
- D. drink

19. Crisp is to soggy as fresh is to ____.

- A. warm
- B. sweet
- C. stale
- D. sliced

20. Pantry is to flour as refrigerator is to ____.

- A. milk
- B. pepper
- C. rice
- D. sugar

21. Mom put the cake in the ____ to bake it.

- A. freezer
- B. oven
- C. sink
- D. basket

22. We use a _____ to flip the pancakes in the pan.

- A. ladle
- B. whisk
- C. straw
- D. spatula

23. The ice cream melted quickly because the day was very _____.

- A. hot
- B. cold
- C. rainy
- D. dark

24. Carlos was so hungry that he _____ his whole sandwich in two minutes.

- A. planted
- B. counted
- C. gobbled
- D. painted

25. The lemon made my mouth pucker because it was so _____.

- A. sour

- B. sweet
- C. soft
- D. warm

26. Dad _____ the carrots into small pieces before adding them to the stew.

- A. poured
- B. froze
- C. wrapped
- D. chopped

27. The recipe says to _____ the butter in a pan until it turns into liquid.

- A. chill
- B. crush
- C. melt
- D. fold

28. The bread smelled so _____ that everyone came running to the kitchen.

- A. frightened
- B. delicious
- C. crooked
- D. silent

29. Mia used an oven mitt to hold the pot because the handle was _____.

- A. empty
- B. round
- C. shiny
- D. hot

30. There was only a ____ of juice left, so nobody could have a full glass.

- A. gallon
- B. barrel
- C. drop
- D. bucket

31. Nina tasted the soup and added a pinch of salt because it was ____.

- A. bland
- B. spicy
- C. burnt
- D. frozen

32. The milk went ____ after sitting on the counter all weekend.

- A. solid
- B. sour
- C. square
- D. silent

33. Grandma is a very ____ cook who never wastes even one scrap of food.

- A. wasteful
- B. lazy
- C. greedy
- D. thrifty

34. The recipe was ____ to follow, with only three easy steps.

- A. simple
- B. complicated
- C. impossible
- D. lengthy

35. The cookies were _____ after a week in the open jar, so they were no longer crunchy.

- A. fresh
- B. warm
- C. stale
- D. crispy

36. To keep the leftover soup from spoiling, Ben _____ it in the refrigerator.

- A. spilled
- B. stored
- C. ignored
- D. borrowed

37. Although the pie looked _____, it tasted _____.

- A. ugly...delicious
- B. ugly...terrible
- C. pretty...wonderful
- D. round...sweet

38. The chef was _____ about cleanliness, wiping every counter twice.

- A. careless

- B. careful
- C. curious
- D. cheerful

39. Fruit that is not ____ yet is hard and sour, so wait until it softens.

- A. rotten
- B. frozen
- C. ripe
- D. peeled

40. The farmers market offered a ____ of fresh fruit, with over thirty kinds on display.

- A. shortage
- B. pinch
- C. mistake
- D. variety

41. Which word belongs with: apple, pear, plum?

- A. carrot
- B. bread
- C. grape
- D. milk

42. Which word belongs with: carrot, pea, corn?

- A. banana
- B. cheese
- C. rice
- D. broccoli

43. Which word belongs with: milk, juice, water?

- A. tea
- B. bread
- C. pasta
- D. cheese

44. Which word belongs with: spoon, fork, knife?

- A. plate
- B. chopsticks
- C. pot
- D. bowl

45. Which word belongs with: pot, pan, kettle?

- A. apple
- B. cheese
- C. fork
- D. wok

46. Which word belongs with: bake, fry, boil?

- A. eat
- B. roast
- C. chew
- D. buy

47. Which word belongs with: salty, sour, bitter?

- A. sweet
- B. crunchy
- C. cold
- D. soft

48. Which word belongs with: cheese, butter, yogurt?

- A. bread
- B. apple
- C. cream
- D. beans

49. Which word belongs with: breakfast, lunch, dinner?

- A. recipe
- B. kitchen
- C. hungry
- D. snack

50. Which word belongs with: chicken, beef, pork?

- A. lamb
- B. corn
- C. cheese
- D. bread

51. Which word belongs with: oven, stove, microwave?

- A. cup

- B. sugar
- C. toaster
- D. table

52. Which word belongs with: rice, pasta, bread?

- A. grapes
- B. oats
- C. milk
- D. carrot

53. Which word belongs with: cinnamon, pepper, ginger?

- A. nutmeg
- B. flour
- C. honey
- D. butter

54. Which word belongs with: peeler, grater, whisk?

- A. lemon
- B. cookie
- C. stool
- D. ladle

55. Which word belongs with: cup, mug, glass?

- A. plate
- B. spoon
- C. goblet
- D. napkin

56. Which word belongs with: sandwich, taco, burrito?

- A. soup
- B. wrap
- C. salad
- D. cereal

57. Which word belongs with: cherry, strawberry, tomato?

- A. banana
- B. pea
- C. lemon
- D. raspberry

58. Which word belongs with: sizzle, crackle, pop?

- A. bubble
- B. stir
- C. taste
- D. smell

59. Which word belongs with: flour, yeast, water?

- A. toaster
- B. salt
- C. oven
- D. slice

60. Two number pairs follow the same rule: $2 : 6$ and $4 : 12$. Which number goes with 5 ($5 : ?$) in the same way?

- A. 8
- B. 10
- C. 15
- D. 20

61. Two number pairs follow the same rule: $10 : 5$ and $18 : 9$. Which number goes with 14 ($14 : ?$) in the same way?

- A. 28
- B. 10
- C. 12
- D. 7

62. Two number pairs follow the same rule: $3 : 8$ and $6 : 11$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 18
- B. 14
- C. 12
- D. 13

63. Two number pairs follow the same rule: $20 : 15$ and $12 : 7$. Which number goes with 30 ($30 : ?$) in the same way?

- A. 24
- B. 35
- C. 25
- D. 20

64. Two number pairs follow the same rule: $6 : 2$ and $12 : 4$. Which number goes with 21 ($21 : ?$) in the same way?

- A. 7
- B. 18
- C. 63
- D. 14

65. Two number pairs follow the same rule: $4 : 9$ and $7 : 15$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 20
- B. 15
- C. 21
- D. 22

66. Two number pairs follow the same rule: $3 : 9$ and $5 : 25$. Which number goes with 6 ($6 : ?$) in the same way?

- A. 36
- B. 12
- C. 30
- D. 24

67. Two number pairs follow the same rule: $2 : 5$ and $4 : 11$. Which number goes with 6 ($6 : ?$) in the same way?

- A. 18
- B. 16
- C. 12
- D. 17

68. Two number pairs follow the same rule: $24 : 6$ and $40 : 10$. Which number goes with 32 ($32 : ?$) in the same way?

- A. 36
- B. 8
- C. 28
- D. 16

69. Two number pairs follow the same rule: $4 : 20$ and $7 : 35$. Which number goes with 8 ($8 : ?$) in the same way?

- A. 40
- B. 13
- C. 48
- D. 36

70. Two number pairs follow the same rule: $8 : 20$ and $15 : 27$. Which number goes with 23 ($23 : ?$) in the same way?

- A. 46
- B. 11
- C. 32
- D. 35

71. Two number pairs follow the same rule: $4 : 13$ and $7 : 19$. Which number goes with 10 ($10 : ?$) in the same way?

- A. 20
- B. 15
- C. 25
- D. 24

72. Two number pairs follow the same rule: $18 : 3$ and $30 : 5$. Which number goes with 42 ($42 : ?$) in the same way?

- A. 36
- B. 7
- C. 48
- D. 8

73. Two number pairs follow the same rule: $10 : 8$ and $20 : 13$. Which number goes with 30 ($30 : ?$) in the same way?

- A. 18
- B. 15
- C. 33
- D. 27

74. Two number pairs follow the same rule: $6 : 10$ and $9 : 16$. Which number goes with 12 ($12 : ?$) in the same way?

- A. 24
- B. 14
- C. 22
- D. 20

75. Two number pairs follow the same rule: $3 : 14$ and $5 : 22$. Which number goes with 8 ($8 : ?$) in the same way?

- A. 32
- B. 12
- C. 36
- D. 34

76. Two number pairs follow the same rule: $8 : 10$ and $11 : 16$. Which number goes with 15 ($15 : ?$) in the same way?

- A. 30
- B. 24
- C. 12
- D. 18

77. Two number pairs follow the same rule: $46 : 53$ and $28 : 35$. Which number goes with 64 ($64 : ?$) in the same way?

- A. 57
- B. 128
- C. 71
- D. 67

78. Two number pairs follow the same rule: $25 : 6$ and $40 : 9$. Which number goes with 65 ($65 : ?$) in the same way?

- A. 13
- B. 14
- C. 60
- D. 70

79. Two number pairs follow the same rule: $4 : 22$ and $6 : 34$. Which number goes with 9 ($9 : ?$) in the same way?

- A. 54
- B. 48
- C. 43
- D. 52

80. What number makes this equation true? $\underline{\hspace{1cm}} + 9 = 23$

- A. 14
- B. 32
- C. 13
- D. 15

81. What number makes this equation true? $36 - \underline{\hspace{1cm}} = 20$

- A. 56
- B. 15
- C. 17
- D. 16

82. What number makes this equation true? $6 \times \underline{\hspace{1cm}} = 42$

- A. 7
- B. 36
- C. 8
- D. 48

83. What number makes this equation true? $\underline{\hspace{1cm}} / 4 = 9$

- A. 5
- B. 13
- C. 36
- D. 32

84. Which sign makes this true? $8 \text{ ? } 2 = 16$

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

85. Each box stands for the same number. If $\text{box} + \text{box} + \text{box} = 27$, what is the box?

- A. 24
- B. 9
- C. 8
- D. 81

86. What number makes this equation true? $5 \times \underline{\hspace{1cm}} + 3 = 38$

- A. 6
- B. 8
- C. 35
- D. 7

87. Which sign makes this true? $20 \text{ ? } 5 = 15$

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

88. What number makes this equation true? $\underline{\hspace{1cm}} - 14 = 3 \times 5$

- A. 29
- B. 1
- C. 19

D. 15

89. What number makes this equation true? $48 \div \underline{\hspace{1cm}} = 6$

A. 7

B. 9

C. 42

D. 8

90. Each box stands for the same number. If $\text{box} \times \text{box} = 49$, what is the box?

A. 14

B. 24

C. 7

D. 8

91. What number makes this equation true? $4 \times \underline{\hspace{1cm}} - 6 = 30$

A. 6

B. 9

C. 8

D. 24

92. Which sign makes this true? $18 \text{ ? } 3 = 6$

A. divided by

B. plus

C. minus

D. times

93. What number makes this equation true? $(\underline{\hspace{1cm}} + 8) / 2 = 10$

- A. 12
- B. 18
- C. 20
- D. 28

94. Each box stands for the same number. If $\text{box} + \text{box} + 9 = 31$, what is the box?

- A. 22
- B. 13
- C. 11
- D. 20

95. What number makes this equation true? $7 \times 8 = \underline{\hspace{1cm}} \times 4$

- A. 56
- B. 28
- C. 12
- D. 14

96. Each box stands for the same number. If $3 \times \text{box} = \text{box} + 18$, what is the box?

- A. 6
- B. 9
- C. 18
- D. 27

97. What number makes this equation true? $100 - (\underline{\hspace{1cm}} \times 5) = 55$

- A. 45
- B. 11
- C. 19
- D. 9

98. Each box stands for the same number. If $\text{box} \times \text{box} + \text{box} = 56$, what is the box?

- A. 7
- B. 8
- C. 6
- D. 14

99. What number comes next in the series? 5, 9, 13, 17, _____

- A. 20
- B. 21
- C. 22
- D. 25

100. What number comes next in the series? 40, 36, 32, 28, _____

- A. 20
- B. 26
- C. 24
- D. 32

101. What number comes next in the series? 12, 19, 26, 33, _____

- A. 39
- B. 41
- C. 47

D. 40

102. What number comes next in the series? 100, 90, 80, 70, _____

A. 50

B. 65

C. 60

D. 75

103. What number comes next in the series? 2, 4, 8, 16, _____

A. 32

B. 24

C. 30

D. 64

104. What number comes next in the series? 1, 2, 4, 7, 11, _____

A. 15

B. 16

C. 17

D. 18

105. What number comes next in the series? 81, 27, 9, 3, _____

A. 0

B. 2

C. 6

D. 1

106. What number comes next in the series? 3, 5, 8, 12, 17, _____

- A. 22
- B. 23
- C. 24
- D. 25

107. What number comes next in the series? 2, 6, 18, 54, _____

- A. 162
- B. 108
- C. 72
- D. 216

108. What number comes next in the series? 10, 20, 15, 25, 20, _____

- A. 25
- B. 35
- C. 30
- D. 15

109. What number comes next in the series? 1, 50, 2, 45, 3, 40, _____

- A. 4
- B. 35
- C. 5
- D. 45

110. What number comes next in the series? 64, 32, 16, 8, _____

- A. 2
- B. 6
- C. 12
- D. 4

111. What number comes next in the series? 2, 5, 11, 23, _____

- A. 46
- B. 47
- C. 49
- D. 35

112. What number comes next in the series? 4, 5, 7, 10, 14, _____

- A. 18
- B. 20
- C. 19
- D. 24

113. What number comes next in the series? 3, 6, 5, 10, 9, 18, _____

- A. 19
- B. 21
- C. 36
- D. 17

114. What number comes next in the series? 7, 100, 14, 90, 21, 80, _____

- A. 70
- B. 35
- C. 28

D. 27

115. What number comes next in the series? 1, 4, 9, 16, 25, _____

A. 30

B. 36

C. 35

D. 49

116. What number comes next in the series? 2, 4, 10, 28, 82, _____

A. 244

B. 246

C. 164

D. 242

117. What number comes next in the series? 4, 7, 14, 17, 34, 37, _____

A. 40

B. 71

C. 74

D. 68

118. What number comes next in the series? 36, 20, 12, 8, 6, _____

A. 4

B. 5

C. 3

D. 7

119. A 2 by 2 grid is shown. Top row: a small circle, then a large circle. Bottom row: a small square, then an empty box. Which figure completes the grid?

- A. A small square
- B. A large circle
- C. A large triangle
- D. A large square

120. A 2 by 2 grid is shown. Top row: a black circle, then a white circle. Bottom row: a white square, then an empty box. Which figure completes the grid?

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

121. A grid with 2 rows and 3 columns is shown. Top row: a small star, a medium star, a large star. Bottom row: a small heart, a medium heart, then an empty box. Which figure completes the grid?

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

122. A 2 by 2 grid is shown. Top row: an arrow pointing up, then an arrow pointing right. Bottom row: an arrow pointing down, then an empty box. Which figure completes the grid?

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

123. A 2 by 2 grid is shown. Top row: one black dot, then two black dots. Bottom row: one white triangle, then an empty box. Which figure completes the grid?

- A. Two black triangles
- B. One white triangle
- C. Two white triangles
- D. Two white dots

124. A grid with 2 rows and 3 columns is shown. Top row: a white circle, a white square, a white triangle. Bottom row: a black circle, a black square, then an empty box. Which figure completes the grid?

- A. A white triangle
- B. A black circle
- C. A black pentagon
- D. A black triangle

125. A 2 by 2 grid is shown. Top row: a box with a dot in its top-left corner, then a box with a dot in its top-right corner. Bottom row: a box with a square in its bottom-left corner, then an empty box. Which figure completes the grid?

- A. A box with a square in its bottom-left corner
- B. A box with a square in its top-right corner
- C. A box with a square in its top-left corner
- D. A box with a square in its bottom-right corner

126. A 2 by 2 grid is shown. Top row: a small square, then a small square with a dot inside. Bottom row: a small triangle, then an empty box. Which figure completes the grid?

- A. A small triangle with two dots inside
- B. A small triangle with a dot inside
- C. A small square with a dot inside

D. A small triangle with no dot

127. A grid with 2 rows and 3 columns is shown. Top row: one line, two lines, three lines. Bottom row: one dot, two dots, then an empty box. Which figure completes the grid?

- A. Four dots
- B. Three lines
- C. Three dots
- D. Two dots

128. A grid with 2 rows and 3 columns is shown. Top row: an arrow pointing up, an arrow pointing right, an arrow pointing down. Bottom row: an arrow pointing right, an arrow pointing down, then an empty box. Which figure completes the grid?

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

129. A 2 by 2 grid is shown. Top row: a box with a dot on its top side, then a box with a dot on its right side. Bottom row: a box with a triangle on its left side, then an empty box. Which figure completes the grid?

- A. A box with a triangle on its right side
- B. A box with a triangle on its top side
- C. A box with a triangle on its bottom side
- D. A box with a triangle on its left side

130. A 3 by 3 grid is shown. Row 1: a circle, a square, a triangle. Row 2: a square, a triangle, a circle. Row 3: a triangle, a circle, then an empty box. Which figure completes the grid?

- A. A square
- B. A circle
- C. A triangle
- D. A diamond

131. A 3 by 3 grid is shown. Row 1: one star, two stars, three stars. Row 2: two stars, three stars, four stars. Row 3: three stars, four stars, then an empty box. Which figure completes the grid?

- A. Six stars
- B. Three stars
- C. Five stars
- D. Four stars

132. A 3 by 3 grid is shown. Row 1: a white circle, a gray circle, a black circle. Row 2: a gray square, a black square, a white square. Row 3: a black triangle, a white triangle, then an empty box. Which figure completes the grid?

- A. A gray square
- B. A white triangle
- C. A black triangle
- D. A gray triangle

133. A 3 by 3 grid is shown. Row 1: a dot, a square, then a dot together with a square. Row 2: a triangle, a circle, then a triangle together with a circle. Row 3: a star, a heart, then an empty box. Which figure completes the grid?

- A. Star alone
- B. Star and heart
- C. Heart alone
- D. Two stars

134. A 3 by 3 grid is shown. Row 1: two dots, three dots, five dots. Row 2: one dot, four dots, five dots. Row 3: three dots, two dots, then an empty box. Which figure completes the grid?

- A. Six dots
- B. One dot
- C. Four dots
- D. Five dots

135. A grid with 2 rows and 3 columns is shown. Top row: an arrow pointing up with one line, an arrow pointing right with two lines, an arrow pointing down with three lines. Bottom row: an arrow pointing right with one line, an arrow pointing down with two lines, then an empty box. Which figure completes the grid?

- A. An arrow pointing left with three lines
- B. An arrow pointing left with two lines
- C. An arrow pointing down with three lines
- D. An arrow pointing up with three lines

136. A 3 by 3 grid is shown. Row 1: a plain circle, a circle with one vertical line, a circle with a vertical and a horizontal line. Row 2: the same three pictures drawn with squares. Row 3: a plain triangle, a triangle with one vertical line, then an empty box. Which figure completes the grid?

- A. A triangle with no lines
- B. A triangle with one line
- C. A triangle with both lines
- D. A square with both lines

137. A 3 by 3 grid is shown. Row 1: a black circle, a white square, a gray triangle. Row 2: a gray square, a black triangle, a white circle. Row 3: a white triangle, a gray circle, then an empty box. Which figure completes the grid?

- A. A gray square

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

138. A 3 by 3 grid is shown. Row 1: a triangle, a square, a pentagon. Row 2: a square, a pentagon, a hexagon. Row 3: a pentagon, a hexagon, then an empty box. Which figure completes the grid?

- A. An eight-sided figure
- B. A seven-sided figure
- C. A six-sided figure
- D. A five-sided figure

139. A square sheet of paper is folded in half from left to right. One hole is punched through the folded paper, away from the fold. The paper is opened flat. How many holes are on the sheet?

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

140. A square sheet of paper is folded in half from top to bottom. Two holes are punched through the folded paper, both away from the fold. The paper is opened flat. How many holes are on the sheet?

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

141. A sheet of paper is folded like a letter into thirds, so there are three layers stacked together. One hole is punched through all three layers. The paper is opened flat. How many holes are on the sheet?

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

142. A square sheet of paper is folded in half from top to bottom, and then in half again from left to right. One hole is punched in the middle of the small folded square, away from all the folds. The paper is opened flat. How many holes are on the sheet?

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

143. A square sheet of paper is folded in half from left to right. Three holes are punched in a row down the middle of the folded paper, away from the fold. The paper is opened flat. How many holes are on the sheet?

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

144. A square sheet of paper is folded in half by bringing the top edge down to the bottom edge. A hole is punched on the left side of the folded paper, close to the fold. The paper is opened flat. Which picture shows the sheet?

- A. Two holes on the left side, one near the top edge and one near the bottom edge
- B. One hole on the left side, just below the middle
- C. Two holes on the left side, one just above the middle and one just below it
- D. Two holes in the middle, one just above the center and one just below

145. A square sheet of paper is folded in half by bringing the left edge over to the right edge. A hole is punched at the middle height of the folded paper, close to the right edge. The paper is opened flat. Which picture shows the sheet?

- A. Two holes at middle height, both near the center
- B. One hole at middle height, near the right edge
- C. Two holes at middle height, one near each edge
- D. Two holes near the right edge, one above the other

146. A square sheet of paper is folded in half from left to right, and then in half again from left to right in the same way. Two holes are punched through the folded paper, away from the folds. The paper is opened flat. How many holes are on the sheet?

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

147. A sheet of paper is folded like a letter into three layers. Four holes are punched through all three layers, away from the folds. The paper is opened flat. How many holes are on the sheet?

- A. 4 holes
- B. 7 holes
- C. 16 holes
- D. 12 holes

148. A square sheet of paper is folded from corner to corner to make a triangle. One hole is punched in the middle of the triangle, away from the fold. The paper is opened flat. Which picture shows the sheet?

- A. Two holes, mirror images across the fold line
- B. Two holes, both on the same side of the fold line
- C. One hole exactly on the diagonal fold line

D. Four holes, two on each side of the fold line

149. A square sheet of paper is folded in half from left to right. Two holes are punched at the middle height of the folded paper, one close to the fold and one close to the open edge. The paper is opened flat. Which picture shows the sheet?

- A. Two holes in a middle row, one near each edge
- B. Four holes in a row, two central and one near each edge
- C. Four holes in a middle row, all bunched at the center
- D. Four holes, two near the top edge and two near the bottom edge

150. A square sheet of paper is folded in half from left to right and then in half again, making four layers. Five holes are punched through the folded paper, away from the folds. The paper is opened flat. How many holes are on the sheet?

- A. 5 holes
- B. 9 holes
- C. 16 holes
- D. 20 holes

151. A square sheet of paper is folded in half from left to right. A half-circle shape is cut out of the middle of the folded edge. The paper is opened flat. Which picture shows the sheet?

- A. Two half-circle notches at the left and right edges
- B. Two small round holes side by side in the middle
- C. One round hole in the middle of the sheet
- D. One half-circle notch at the left edge

152. A square sheet of paper is folded in half from top to bottom, and then in half again from left to right. A hole is punched near the bottom-right corner of the small folded square. The paper is opened flat. Which picture shows the sheet?

- A. Four holes, one near each corner of the sheet
- B. Four holes, all close together near the center
- C. Four holes in a row across the middle
- D. One hole near the bottom-right corner

153. A square sheet of paper is folded in half from top to bottom, and then in half again from left to right. A hole is punched near the top-left corner of the small folded square. The paper is opened flat. Which picture shows the sheet?

- A. Four holes close together around the center of the sheet
- B. Four holes, one near each corner of the sheet
- C. Four holes in a row across the middle
- D. One hole near the center of the sheet

154. A square sheet of paper is folded in half from top to bottom, and then in half again from left to right. A hole is punched near the middle of the bottom edge of the small folded square. The paper is opened flat. Which picture shows the sheet?

- A. Four holes: two near the left, two near the right
- B. Four holes: two near the top, two near the bottom
- C. Four holes, one near each corner of the sheet
- D. Four holes close together around the center

155. A square sheet of paper is folded in half from left to right. A small triangle is cut out of the folded edge, with its flat side along the fold. The paper is opened flat. Which picture shows the sheet?

- A. One triangle-shaped hole in the middle of the sheet
- B. Two triangle-shaped holes side by side in the middle
- C. One square hole in the middle of the sheet
- D. One diamond-shaped hole in the middle of the sheet

156. A square sheet of paper is folded corner to corner to make a triangle, and the triangle is then folded in half again by bringing its two sharp corners together. One hole is punched in the middle of the small triangle, away from the folds. The paper is opened flat. Which picture shows the sheet?

- A. Two holes, one on each of the two diagonals
- B. Four holes, all on the same diagonal line
- C. Four holes, one in each diagonal triangle
- D. Eight holes, two in each of the four triangles

157. A square sheet of paper is folded in half from left to right, and then in half again from top to bottom. A hole is punched exactly on the top edge of the small folded square, halfway along that edge. The paper is opened flat. Which picture shows the sheet?

- A. Two holes on the middle horizontal line, left and right
- B. Two holes on the middle vertical line, top and bottom
- C. Four holes, one in each quarter of the sheet
- D. One hole at the exact center of the sheet

158. Three figures are shown. Figure 1: a small white circle. Figure 2: a large black circle. Figure 3: a medium gray circle. Which figure is most like the first three?

- A. A small black square
- B. A large white triangle
- C. A medium gray square
- D. A medium black circle

159. Three figures are shown. Figure 1: a small black triangle. Figure 2: a large white triangle. Figure 3: a medium dotted triangle. Which figure is most like the first three?

- A. A medium gray square
- B. A medium gray triangle
- C. A small black circle

D. A large white pentagon

160. Three figures are shown. Figure 1: a small pentagon. Figure 2: a tilted pentagon. Figure 3: a pentagon with a dot inside. Which figure is most like the first three?

- A. A hexagon with a line inside
- B. A rectangle with a line inside
- C. A pentagon with a line inside
- D. A triangle with a line inside

161. Three figures are shown. Figure 1: a small gray square. Figure 2: a tilted gray square. Figure 3: a large gray square with a dot inside. Which figure is most like the first three?

- A. A white square
- B. A white rectangle
- C. A white triangle
- D. A white circle

162. Three figures are shown. Figure 1: a circle. Figure 2: a tall oval. Figure 3: a ring, which is a circle with a round hole in the middle. Which figure is most like the first three?

- A. A triangle
- B. A square
- C. A hexagon
- D. A flat oval

163. Three figures are shown. Figure 1: a circle with its left half black and its right half white. Figure 2: a square with its left half black and its right half white. Figure 3: a triangle with its left half black and its right half white. Which figure is most like the first three?

- A. An all black star

- B. An all white star
- C. A half black, half white star
- D. A star covered with dots

164. Three figures are shown. Figure 1: a circle with only its bottom half black. Figure 2: a square with only its bottom half black. Figure 3: a triangle with only its bottom half black. Which figure is most like the first three?

- A. A hexagon with a black top half
- B. A hexagon with a black bottom half
- C. A hexagon with a black left half
- D. An all black hexagon

165. Three figures are shown. Figure 1: a circle with two dots inside. Figure 2: a square with two dots inside. Figure 3: a triangle with two dots inside. Which figure is most like the first three?

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

166. Three figures are shown. Figure 1: a circle with one line across its middle. Figure 2: a square with one line from corner to corner. Figure 3: a triangle with one line from its top point to its base. Which figure is most like the first three?

- A. A hexagon with two lines across it
- B. A hexagon with one line across it
- C. A hexagon with three lines across it
- D. A hexagon with no lines

167. Three figures are shown. Figure 1: a circle with a dot on its edge. Figure 2: a square with a dot on one of its sides. Figure 3: a triangle with a dot on one of its corners. Which figure is most like the first three?

- A. A star with a dot inside it
- B. A star with a dot far outside it
- C. A star with a dot on its edge
- D. A star with no dot at all

168. Three figures are shown. Figure 1: two black dots and one white dot. Figure 2: two black squares and one white square. Figure 3: two black triangles and one white triangle. Which figure is most like the first three?

- A. Two black stars and one white star
- B. Two white stars and one black star
- C. Three black stars
- D. One black star and one white star

169. Three figures are shown. Figure 1: three circles in a row with only the middle one black. Figure 2: three squares in a row with only the left one black. Figure 3: three triangles in a row with only the right one black. Which figure is most like the first three?

- A. Three stars in a row, only one black
- B. Three stars in a row, all white
- C. Three stars in a row, two black
- D. Two stars in a row, one black

170. Three figures are shown. Figure 1: a circle touching a square at one point. Figure 2: a square touching a triangle at one point. Figure 3: a triangle touching a circle at one point. Which figure is most like the first three?

- A. A star overlapping a circle a lot

- B. A star inside a large circle
- C. A star just touching a circle
- D. A star far from a circle

171. Three figures are shown. Figure 1: a triangle with three dots inside. Figure 2: a square with four dots inside. Figure 3: a pentagon with five dots inside. Which figure is most like the first three?

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

172. Three figures are shown. Figure 1: three circles, one inside the next. Figure 2: three squares, one inside the next. Figure 3: three triangles, one inside the next. Which figure is most like the first three?

- A. Three diamonds in a row
- B. Three diamonds stacked in a tower
- C. Two diamonds, one inside the other
- D. Three diamonds, one inside the next

173. Three figures are shown. Figure 1: a heart. Figure 2: a butterfly. Figure 3: a kite. Which figure is most like the first three?

- A. A crooked lightning bolt
- B. A leaf with matching halves
- C. A lopsided blob
- D. A curly snail shell

174. Three figures are shown. Figure 1: a figure with four corners. Figure 2: a figure with six corners. Figure 3: a figure with ten corners. Which figure is most like the first three?

- A. A figure with eight corners
- B. A figure with three corners
- C. A figure with five corners
- D. A figure with nine corners

175. Three figures are shown. Figure 1: a half circle. Figure 2: a tall arch with a flat bottom. Figure 3: a D shape. Which figure is most like the first three?

- A. A full circle
- B. A plain square
- C. A pointed triangle
- D. A flat-based dome

176. Three figures are shown. Figure 1: a triangle. Figure 2: the letter Z. Figure 3: the letter N. Which figure is most like the first three?

- A. The letter X
- B. The letter E
- C. The letter H
- D. A square

Practice Exam 4: Answer Key and Explanations

1. C — A spoon is the tool people use to eat soup, so the pair links a utensil with the food it handles. A fork matches pasta, which can be twirled and lifted. Juice, milk, and tea are drinks poured into cups, and a fork cannot hold liquid, so those three choices do not match the relationship.

2. B — An oven is the appliance that bakes food, so the pair links an appliance with the job it does. A freezer is the appliance that freezes food. Boil, fry, and toast are all ways of heating food, and a freezer is built to make things very cold, so none of them fit the relationship.

3. D — An egg is protected by its shell, which is the outer covering you remove before eating. A banana is protected by its peel in the same way. A slice is a piece you cut, a bowl is a dish you put fruit in, and a seed is inside, so none of those is an outer covering.

- 4. A** — A knife is a kitchen tool made for cutting, so the pair links a tool with its main job. A blender is made to mix and whirl foods together into smoothies or sauces. Cool, bake, and wash are jobs done by a refrigerator, an oven, and a sink, so they do not describe what a blender does.
- 5. C** — A chef works in a kitchen, so the pair links a worker with the place where the main work happens. A farmer works on a farm, growing the crops and raising the animals. A bakery, a store, and a cafe are places where food is made or sold, but a farmer does not mainly work in any of them.
- 6. B** — Grapes grow and are sold together as a bunch, so the pair links food with the word for a group of it. Eggs are counted and sold as a dozen, which means twelve. A pinch, a slice, and a sip are small amounts of salt, pie, or a drink, not groups of eggs.
- 7. D** — A lemon is a food that is famous for tasting sour, so the pair links a taste with a food that shows it. Honey is famous for tasting sweet. Salt and pepper have strong tastes that are not sweet, and a lime is sour like a lemon, so those three choices fail.
- 8. B** — Wheat is crushed into flour, so the pair links a raw plant with a product made from it. Grapes are pressed to make juice. Cheese and butter are made from milk, not fruit, and bread is made from flour, so those three choices are not products that come from grapes.
- 9. A** — You stir with a spoon, so the pair links an action with the tool used to do it. You spread with a knife, such as when you put butter on a muffin. Toast and jam are foods that get spread, not tools, and a plate only holds food, so they fail the tool relationship.
- 10. D** — A baker is a worker who makes bread, so the pair links a worker with the food they prepare and sell. A butcher cuts and sells meat. Cake is made by bakers, soup is made by cooks, and rice is a grain grown by farmers, so none of those three is the butcher's product.
- 11. C** — A whisk is used to beat eggs, so the pair links a tool with a food it works on. A grater turns hard foods into small shreds, and cheese is the classic example. You cannot grate milk, soup, or juice because they are liquids, so those three choices do not fit the relationship.
- 12. A** — A cookbook is a book filled with recipes, so the pair links a book with the main thing inside it. A dictionary is a book filled with words and their meanings. Covers and shelves are things every book has or sits on, and a dictionary is not made of stories, so those fail.
- 13. B** — Dough is the thick mixture that is baked into bread, so the pair links a raw mixture with the food it becomes. Batter is the runny mixture that is baked into cake. Flour and butter are ingredients inside the batter, and an oven is only the appliance used for baking, so those three fail.
- 14. C** — A microwave cooks food very fast, so the pair links an appliance with how quickly it works. A slow cooker is named for the way it cooks food gently over many hours. Quick means the same as fast, which is the opposite of what a slow cooker does, and loud and cold describe sound and temperature instead.

15. A — Simmering is a gentle way of heating liquid and boiling is a stronger, more bubbly version, so the pair shows a small action growing into a bigger one. Walking is gentle movement and running is the stronger version. Sit, stop, and stand mean not moving at all, so they do not show an increase.

16. D — Famished means extremely hungry, so the pair links a very strong word with its plain version. Freezing means extremely cold in the same way. Warm is the opposite of cold, so it breaks the pattern, and spicy and tasty describe how food tastes, not how cold something feels. Only one choice fits.

17. B — A recipe guides a cook through the steps of making a dish, so the pair links a guide with the person who follows it. A map guides a traveler to a destination. A street is a place shown on a map, and a page and paper are only what it is printed on, so those fail.

18. D — A slice is a small part of a whole pizza, so the pair links a small part with the whole food it comes from. A sip is a small part of a whole drink. A napkin, a table, and a plate are things used at a meal, but a sip is never part of any of them.

19. C — Crisp bread or crackers are the opposite of soggy ones, so the pair links two opposite words about food texture. Fresh food is the opposite of stale food that has been left out too long. Warm, sweet, and sliced describe temperature, taste, and shape, so none of them is the opposite of fresh.

20. A — A pantry is the cupboard where dry foods like flour are stored at room temperature, so the pair links a storage place with a food kept there. A refrigerator keeps milk cold so it will not spoil. Pepper, rice, and sugar are dry goods that belong in a pantry, not in a cold refrigerator.

21. B — Baking means cooking with dry heat, and the oven is the only appliance in the list that makes that heat. A freezer would turn the cake into a cold block, a sink is for washing dishes, and a basket only carries things, so none of those can bake the cake.

22. D — A spatula has a flat, wide blade that slides under a pancake and turns it over. A ladle is a deep scoop for soup, a whisk is made of wire loops for beating eggs, and a straw is for drinking, so none of them can lift and flip a flat pancake.

23. A — Ice cream melts when it gets warm, so the sentence needs a word about heat. A very hot day would turn it to liquid fast. A cold day would keep it frozen, and rain or darkness do not warm things up, so those choices do not explain the melting. Only heat explains it.

24. C — The clue is that Carlos was very hungry and finished his sandwich in just two minutes, which means he ate it fast. Gobbled means ate quickly and greedily. Planting seeds, counting items, and painting walls are not things you do to a sandwich, so those choices make no sense. Only gobbled matches that speed.

25. A — Puckering is what your mouth does when it tastes something very tart, so the missing word must describe a sharp taste. A lemon is famously sour. Sweet foods like candy do not make you pucker, and soft and warm describe feel and temperature, not the taste that causes the reaction.

26. D — To make small pieces from a whole carrot, you cut it with a knife, which is called chopping. Pouring is for liquids, so a solid carrot cannot be poured. Freezing or wrapping a carrot would keep it whole, so neither makes small pieces for the stew. Chopping is the only action that creates small pieces.

27. C — Solid butter turns into liquid when heat softens it, and that change is called melting. Chilling makes butter harder and colder, so it moves in the opposite direction. Crushing and folding change the shape of food, but neither one turns a solid into a liquid. Only melting changes hard butter into a liquid in a warm pan.

28. B — People rush toward a kitchen when a smell is pleasant, so the best word describes a smell that makes you want to eat. Delicious fits well. Frightened describes a feeling, crooked describes a shape, and silent means no sound, so none of them can describe a smell that draws a crowd.

29. D — An oven mitt protects hands from burns, so the handle must be dangerously warm. Hot gives a clear reason for wearing the mitt. A handle that is empty, round, or shiny would not hurt Mia's hands, so none of those three words explains why she needed protection. Only a hot handle explains the mitt.

30. C — The sentence says nobody could fill a glass, so only a tiny amount of juice remained. A drop is the smallest amount in the list. A gallon, a barrel, and a bucket are large amounts that would fill many glasses, which would go against the clue. Only a drop explains why the glass could not be filled.

31. A — Salt is added to give flavor, so the soup must have had too little taste, which is called bland. Spicy soup would already have a strong taste, burnt soup needs a new batch rather than salt, and frozen soup could not be tasted with a spoon. Bland is the only word that explains the missing flavor.

32. B — Milk that is left out of the refrigerator for days spoils and develops a sharp, unpleasant taste, which is described as sour. Milk does not turn solid or square in a few days, and silent is a word about sound, not about food that has gone bad. Only sour matches what spoiled milk tastes like.

33. D — A person who saves every scrap and wastes nothing is careful with resources, which is the meaning of thrifty. Wasteful is the exact opposite. Lazy describes someone who avoids work, and greedy describes wanting too much, but neither tells us that Grandma uses all her food. Only thrifty describes a cook who saves every scrap of food.

34. A — Only three easy steps means the recipe is not hard, so simple is the best match. Complicated and impossible both describe something difficult, which contradicts the clue. Lengthy describes something long, but a recipe with just three steps is short, so that word does not fit either. Only simple describes a recipe with three easy steps.

35. C — Food left open for many days loses its crunch and turns dry and tough, which is called stale. Fresh and crispy describe the opposite condition, and the sentence says the cookies were no longer crunchy. Warm describes temperature and says nothing about the crunch being lost. Stale is the only word that explains the lost crunch.

36. B — The goal was to prevent spoiling, so Ben must have done something helpful, and putting the soup away in the cold is called storing it. Spilling and ignoring the soup would let it go bad or be lost, and borrowing means getting something from another person, which does not fit.

37. A — The word although signals a contrast between how the pie looked and how it tasted. Ugly followed by delicious sets a bad appearance against a good taste. Ugly and terrible agree, pretty and wonderful agree, and round and sweet do not oppose each other, so only the first pair keeps the contrast.

38. B — Wiping every counter two times shows great attention to detail, so the chef is careful about keeping things clean. Careless means the opposite and would not match the clue. Curious means eager to learn and cheerful means happy, and neither is shown by wiping counters twice. Careful is the only choice that matches that behavior.

39. C — The sentence says to wait until the fruit softens, which happens as it becomes ripe and ready to eat. Rotten fruit has already gone bad and would not become soft and sweet later. Frozen and peeled fruit describe a condition and a treatment, not the stage of growing that makes it soft.

40. D — Over thirty kinds on display describes many different choices, and the word for that is variety. A shortage means not enough, which goes against the clue. A pinch is a very small amount, and a mistake is an error, so neither fits a large display of fruit. Variety is the only word that matches so many kinds.

41. C — Apple, pear, and plum are all fruits that grow on trees and can be eaten raw. Grape is also a fruit, so it joins the group. Carrot is a vegetable that grows underground, bread is baked from flour, and milk is a drink, so none of those three belongs with the fruits.

42. D — Carrot, pea, and corn are all vegetables that grow in gardens and fields. Broccoli is a green vegetable, so it fits the group. Banana is a fruit, cheese is made from milk, and rice is a grain, so none of those three is a vegetable like the first three. Only broccoli is a vegetable.

43. A — Milk, juice, and water are all liquids that people drink from a cup or glass. Tea is a warm drink, so it fits right in. Bread, pasta, and cheese are solid foods that you chew, so they belong to a different group from the drinks. Only tea is a drink like the first three words.

44. B — Spoon, fork, and knife are utensils that people hold in their hands to eat food. Chopsticks are also held in the hand for eating, so they belong in the group. A plate and a bowl hold the food, and a pot is for cooking, so those three are not eating utensils.

45. D — A pot, a pan, and a kettle are all containers that sit on a stove to heat food or water. A wok is a deep pan for stir-frying, so it belongs. An apple and cheese are foods, and a fork is an eating tool that is not used to heat anything.

46. B — Bake, fry, and boil are all ways of cooking food with heat. Roast also means cooking food with heat, usually in an oven. Eat and chew are things you do after the food is ready, and buy happens at the store, so none of those three is a cooking method.

47. A — Salty, sour, and bitter are all words for tastes you notice on your tongue. Sweet is also a taste, so it belongs with them. Crunchy and soft describe texture, and cold describes temperature, so those three describe how food feels instead of how it tastes. Only sweet names a taste like the first three.

48. C — Cheese, butter, and yogurt are all dairy foods made from milk. Cream is also taken from milk, so it fits the group. Bread is made from flour, an apple grows on a tree, and beans are seeds from plants, so none of those three comes from milk. Only cream is a dairy food like the others.

49. D — Breakfast, lunch, and dinner are all names for times when people eat. A snack is also an eating time, a small one between meals. A recipe is a set of instructions, a kitchen is a room, and hungry is a feeling, so none of those is a kind of meal.

50. A — Chicken, beef, and pork are all meats that come from animals. Lamb is meat from a young sheep, so it belongs. Corn is a plant, cheese is made from milk, and bread is baked from flour, so none of those three is a meat like the first three. Only lamb is a meat like the first three.

51. C — An oven, a stove, and a microwave are all appliances that use power to heat or cook food. A toaster is an appliance that heats bread, so it fits. A cup is a dish, sugar is an ingredient, and a table is furniture, so none of those three is an appliance.

52. B — Rice, pasta, and bread are all foods made from grains, which are the seeds of grass plants. Oats are a grain too, so they belong. Grapes are fruit, milk is a drink, and a carrot is a root vegetable, so none of those three comes from a grain. Only oats are a grain like the others.

53. A — Cinnamon, pepper, and ginger are spices, which are dried plant parts used to add flavor in tiny amounts. Nutmeg is a spice, so it joins the group. Flour, honey, and butter are used in large amounts, and none of them is a dried flavoring from a plant, so they do not belong.

54. D — A peeler, a grater, and a whisk are all hand tools a cook uses to prepare food. A ladle is a deep spoon for scooping soup, so it belongs. A lemon and a cookie are foods, and a stool is a seat, so they are not kitchen tools. Only ladle is a tool like the first three.

55. C — A cup, a mug, and a glass are all containers you lift to your mouth to drink from. A goblet is a tall drinking glass with a stem, so it belongs. A plate holds food, a spoon is a utensil, and a napkin wipes your hands, so they are not for drinking.

56. B — A sandwich, a taco, and a burrito are all foods you hold in your hands and eat without a fork. A wrap is a hand-held food too. Soup, salad, and cereal are usually eaten with a spoon or fork from a bowl, so they do not match the group. Only wrap is held and eaten like the first three.

57. D — Cherry, strawberry, and tomato are all foods that are bright red. Raspberry is a red fruit, so it matches. Banana and lemon are yellow when ripe, and a pea is green, so the colors of those three do not match the group. Only raspberry shares the red color of the first three foods, making it the best match.

58. A — Sizzle, crackle, and pop are all sounds that food makes while it cooks. Bubble is also a sound, such as soup boiling in a pot. Stir is a cook's action, and taste and smell are senses that do not make any sound, so those three do not belong. Only bubble is a sound like the first three.

59. B — Flour, yeast, and water are all ingredients that go into the dough for homemade bread. Salt is another ingredient added to dough, so it belongs. A toaster and an oven are appliances, and a slice is a piece of the finished loaf, so those three are not ingredients. Only salt is an ingredient like the others.

- 60. C** — In both pairs the second number is three times the first, because 2 becomes 6 and 4 becomes 12. Multiplying 5 by 3 gives 15. Adding 3 would give 8, and doubling would give 10, but neither works on the given pairs. The answer 20 comes from multiplying by 4, which fits neither pair.
- 61. D** — Each pair halves the first number, since 10 becomes 5 and 18 becomes 9. Half of 14 is 7. The number 28 doubles instead of halving, which is the opposite rule. Subtracting 4 gives 10 and subtracting 2 gives 12, but neither subtraction matches both of the given pairs, so only 7 follows the rule.
- 62. B** — The second number in each pair is 5 more than the first, because 3 plus 5 is 8 and 6 plus 5 is 11. Adding 5 to 9 gives 14. Doubling 9 gives 18, but doubling 3 gives 6, not 8. Adding 3 gives 12 and adding 4 gives 13, which are not the amount added in the pairs.
- 63. C** — In each pair the second number is 5 less than the first, since 20 minus 5 is 15 and 12 minus 5 is 7. Subtracting 5 from 30 gives 25. The answer 35 adds 5 instead, which reverses the rule. Subtracting 6 gives 24 and subtracting 10 gives 20, but neither matches the difference in the given pairs.
- 64. A** — The second number is one third of the first, because 6 divided by 3 is 2 and 12 divided by 3 is 4. Dividing 21 by 3 gives 7. Subtracting 3 gives 18, but 6 minus 3 is 3, not 2. Multiplying by 3 gives 63, which reverses the rule, and 14 comes from subtracting 7, which fits neither pair.
- 65. C** — Each pair doubles the first number and then adds 1, because 4 doubled is 8, plus 1 is 9, and 7 doubled is 14, plus 1 is 15. Applying both steps to 10 gives 20, plus 1, which is 21. Only doubling gives 20, and adding 5 gives 15, but neither works on the pairs.
- 66. A** — Each second number is the first number multiplied by itself, because 3 times 3 is 9 and 5 times 5 is 25. Multiplying 6 by 6 gives 36. Doubling 6 gives 12 and multiplying by 5 gives 30, but those rules fail on the pairs. The number 24 comes from multiplying by 4, which does not match either pair.
- 67. D** — The rule is to multiply by 3 and then subtract 1, since 2 times 3 is 6, minus 1 is 5, and 4 times 3 is 12, minus 1 is 11. For 6, that gives 18 minus 1, which is 17. Only tripling gives 18, and the choices 16 and 12 come from different rules that fail on the pairs.
- 68. B** — The second number in each pair is one fourth of the first, because 24 divided by 4 is 6 and 40 divided by 4 is 10. Dividing 32 by 4 gives 8. The answer 36 adds 4 and 28 subtracts 4, but neither works on the pairs. Dividing by 2 gives 16, which turns 24 into 12, not 6.
- 69. A** — Each pair multiplies the first number by 5, because 4 times 5 is 20 and 7 times 5 is 35. Multiplying 8 by 5 gives 40. Adding 5 gives 13, but 4 plus 5 is only 9. Multiplying by 6 gives 48, and 36 comes from subtracting 4 from 40, so both break the rule of the pairs.
- 70. D** — The second number is 12 more than the first, since 8 plus 12 is 20 and 15 plus 12 is 27. Adding 12 to 23 gives 35. The number 46 doubles 23, which would turn 8 into 16 instead of 20. The answer 11 subtracts 12, which reverses the rule, and 32 adds 9, which matches neither pair.
- 71. C** — The rule doubles the first number and adds 5, because 4 doubled is 8, plus 5 is 13, and 7 doubled is 14, plus 5 is 19. For 10, doubling gives 20, plus 5 is 25. Doubling alone gives 20, and adding 5 alone gives 15, but each fails on the pairs. The answer 24 adds only 4.

72. B — The second number is one sixth of the first, since 18 divided by 6 is 3 and 30 divided by 6 is 5. Dividing 42 by 6 gives 7. Subtracting 6 gives 36, but 18 minus 6 is 12, not 3. The answer 48 adds 6, and 8 comes from dividing by 5, so both fail.

73. A — The rule is to halve and then add 3, because half of 10 is 5, plus 3 is 8, and half of 20 is 10, plus 3 is 13. For 30, half is 15, plus 3 is 18. Halving alone gives 15, which skips the second step. The choices 33 and 27 add or subtract 3 from 30.

74. C — Each pair doubles the first number and then subtracts 2, since 6 doubled is 12, minus 2 is 10, and 9 doubled is 18, minus 2 is 16. For 12, doubling gives 24, minus 2 is 22. Doubling alone gives 24, which skips the subtraction, and 14 and 20 come from other rules that fail on the pairs.

75. D — The rule is to multiply by 4 and then add 2, since 3 times 4 is 12, plus 2 is 14, and 5 times 4 is 20, plus 2 is 22. For 8, multiplying gives 32, plus 2 is 34. The number 32 skips the adding step, and 12 and 36 come from rules that fail on the pairs.

76. B — The rule is to subtract 3 and then double, because 8 minus 3 is 5, doubled is 10, and 11 minus 3 is 8, doubled is 16. For 15, subtracting 3 gives 12, doubled is 24. Doubling alone gives 30, which skips the first step. The choice 12 skips the doubling, and 18 adds 3 instead.

77. C — Each second number is 7 more than the first, since 46 plus 7 is 53 and 28 plus 7 is 35. Adding 7 to 64 gives 71. The answer 57 subtracts 7, which reverses the rule, and 128 doubles the number. The number 67 adds only 3, which matches neither pair.

78. B — The rule is to divide by 5 and add 1, because 25 divided by 5 is 5, plus 1 is 6, and 40 divided by 5 is 8, plus 1 is 9. For 65, dividing gives 13, plus 1 is 14. Dividing alone gives 13, skipping the last step. The choices 60 and 70 add or subtract 5.

79. D — The rule is to multiply by 6 and then subtract 2, since 4 times 6 is 24, minus 2 is 22, and 6 times 6 is 36, minus 2 is 34. For 9, multiplying gives 54, minus 2 is 52. The number 54 skips the subtraction, and 48 and 43 come from rules that do not fit the pairs.

80. A — To find the missing addend, subtract the known part from the total, so 23 minus 9 equals 14. Checking, 14 plus 9 is 23. The choice 32 comes from adding 23 and 9 together, which finds the wrong direction. The choices 13 and 15 are one away from 14, so each makes the sum 22 or 24, not 23.

81. D — The missing number is the amount taken away from 36 to leave 20, so subtract 20 from 36 and get 16. Checking, 36 minus 16 is 20. The choice 56 adds the two numbers, which is the wrong operation. The choices 15 and 17 are close, but 36 minus 15 is 21 and 36 minus 17 is 19.

82. A — To find the missing factor, divide the product by the known factor, so 42 divided by 6 equals 7. Checking, 6 times 7 is 42. The choice 36 comes from subtracting 6 from 42, and 48 comes from adding 6, which are wrong operations. The choice 8 gives 6 times 8, which is 48, not 42.

83. C — Dividing a number by 4 gives 9, so the number must be 4 groups of 9, which is 36. Checking, 36 divided by 4 is 9. The choices 5 and 13 come from subtracting or adding 4 instead of using multiplication. The choice 32 is 4 times 8, and 32 divided by 4 is 8, not 9.

84. B — Only multiplication turns 8 and 2 into 16, because 8 times 2 equals 16. Plus gives 8 plus 2, which is only 10. Minus gives 8 minus 2, which is 6. Divided by gives 8 divided by 2, which is 4. Each of those three results is different from 16, so the sign must be times.

85. B — Three equal boxes add up to 27, so one box is 27 divided by 3, which equals 9. Checking, 9 plus 9 plus 9 is 27. The choice 24 comes from subtracting 3, and 81 comes from multiplying by 3, which are wrong operations. The choice 8 gives a total of 24, which is too low.

86. D — Work backward in two steps. First subtract the 3 that was added, so 38 minus 3 is 35. Then divide by 5, which gives 7. Checking, 5 times 7 is 35, plus 3 is 38. The choice 35 stops after the first step. The choices 6 and 8 give totals of 33 and 43.

87. C — Taking 5 away from 20 leaves 15, so the sign must be minus. Plus would give 20 plus 5, which is 25. Times would give 100, which is far too large. Divided by would give 20 divided by 5, which is only 4. None of those three results equals 15, so only minus works.

88. A — First work out the right side, since 3 times 5 is 15. Then the missing number is 14 more than 15, so 15 plus 14 equals 29. Checking, 29 minus 14 is 15. The choice 1 subtracts instead of adds, and 15 is just the right side. The choice 19 adds only 4, so 19 minus 14 is 5.

89. D — Dividing 48 by the missing number gives 6, so the missing number is 48 divided by 6, which is 8. Checking, 48 divided by 8 is 6. The choices 7 and 9 are close but give 6 and a bit, and 5 and a third, not 6. The choice 42 subtracts 6 from 48, which is the wrong operation.

90. C — A number multiplied by itself that makes 49 is 7, since 7 times 7 equals 49. The choice 14 comes from adding 7 and 7, which is a different operation. The choice 8 times 8 is 64, which is too big. The choice 24 is far too large, because 24 times 24 would be 576.

91. B — Undo the steps in reverse order. Add the 6 back, so 30 plus 6 is 36. Then divide by 4, which gives 9. Checking, 4 times 9 is 36, minus 6 is 30. The choice 24 is only 30 minus 6, so it stops after one step. The choices 6 and 8 give totals of 18 and 26.

92. A — Splitting 18 into groups of 3 gives 6 groups, so the sign is divided by. Plus gives 21, minus gives 15, and times gives 54. None of those three answers equals 6, and only division makes 18 and 3 shrink down to 6, so divided by is the only correct sign.

93. A — Work backward from 10. Undo the division by 2 by multiplying, so 10 times 2 is 20. Then undo the adding of 8 by subtracting, so 20 minus 8 equals 12. Checking, 12 plus 8 is 20, and half of 20 is 10. The choice 18 adds 8 to 10, 20 stops early, and 28 adds 8 to 20.

94. C — First remove the 9, so the two boxes together equal 31 minus 9, which is 22. Then split between two equal boxes, so each box is 11. Checking, 11 plus 11 plus 9 is 31. The choice 22 is the total of both boxes, and 13 and 20 give sums of 35 and 49.

95. D — Both sides must equal the same total. Seven times 8 is 56, so the missing number times 4 must also be 56. Dividing 56 by 4 gives 14. The choice 56 is the total itself, and 28 divides by 2 instead of 4. The choice 12 gives 12 times 4, which is 48, not 56.

96. B — Three boxes equal one box plus 18, so the extra two boxes must make up that 18. Two boxes equal 18, so one box is 9. Checking, 3 times 9 is 27, and 9 plus 18 is also 27. The choice 6 gives 18 and 24, and 18 gives 54 and 36, so neither works.

97. D — The part that is subtracted must be 100 minus 55, which is 45. Then the missing number times 5 equals 45, so the missing number is 9. Checking, 9 times 5 is 45, and 100 minus 45 is 55. The choice 45 stops after the first step, and 11 and 19 leave 45 and 5.

98. A — Try the choices in the equation. With 7, the box times the box is 49, and adding another 7 makes 56, which is correct. With 8, the total is 64 plus 8, which is 72. With 6, the total is 36 plus 6, which is 42. With 14, the total is 196 plus 14, which is 210.

99. B — Each number is 4 more than the one before: 5 to 9, 9 to 13, and 13 to 17. Adding 4 to 17 gives 21. The choice 20 adds only 3, and 22 adds 5, so neither matches the steady step. The choice 25 adds 8, which is two steps at once, so it skips a number.

100. C — The series drops by 4 each time, as 40 goes to 36, then 32, then 28. Subtracting 4 from 28 gives 24. The choice 20 drops by 8, skipping a term. The choice 26 drops by only 2, and 32 goes back to an earlier number, so the series would no longer be going down steadily.

101. D — The steady step is 7, since 12 plus 7 is 19, then 26, then 33. Adding 7 to 33 gives 40. The choices 39 and 41 are one off from 40, which come from a small slip in the step. The choice 47 adds 14, which is two steps at once and would skip the term 40.

102. C — The numbers go down by 10 each time, so 70 minus 10 is 60. The choice 50 skips ahead by two steps and leaves out 60. The choices 65 and 75 do not belong to the pattern, since 65 subtracts only 5 and 75 goes upward from 70, which is the wrong direction.

103. A — Each number is double the one before it: 2, 4, 8, 16. Doubling 16 gives 32. The choice 24 adds 8, and 30 adds 14, which are not constant steps, because the differences in the series keep growing. The choice 64 doubles twice, which jumps over 32 and skips a term.

104. B — The steps between numbers grow by one each time: add 1, add 2, add 3, add 4. The next step is 5, so 11 plus 5 equals 16. The choice 15 adds only 4, repeating the last step. The choices 17 and 18 add 6 and 7, which jump ahead of the growing pattern.

105. D — Each number is one third of the one before it, as 81 becomes 27, then 9, then 3. One third of 3 is 1. The choice 0 would come from subtracting, which is not the rule here. The choice 2 subtracts 1, and 6 doubles 3, but neither follows the divide-by-3 pattern.

106. B — The steps between numbers grow by 1 each time: add 2, add 3, add 4, add 5. The next step is 6, so 17 plus 6 is 23. The choice 22 adds only 5, which repeats the last step. The choices 24 and 25 add 7 and 8, which grow too quickly for the pattern.

107. A — Each number is 3 times the one before it, as 2 becomes 6, then 18, then 54. Multiplying 54 by 3 gives 162. The choice 108 doubles 54, and 72 adds 18, so neither follows the tripling rule. The choice 216 is 54 multiplied by 4, which would break the pattern.

108. C — The pattern alternates between adding 10 and subtracting 5: 10 up to 20, down to 15, up to 25, down to 20. The next step is to add 10, so 20 plus 10 is 30. The choice 25 only adds 5, and 15 subtracts 5, which would repeat the wrong step. The choice 35 adds 15.

109. A — Two series are woven together. The numbers in odd places count up by 1, which are 1, 2, 3, and the numbers in even places go down by 5, which are 50, 45, 40. The next term is in an odd place, so it is 4. The choice 35 belongs to the other series, and 5 skips a number.

110. D — Each number is half of the one before it, as 64 becomes 32, then 16, then 8. Half of 8 is 4. The choice 2 halves twice, skipping a term. The choice 6 subtracts 2, which is not the rule, and 12 goes upward, which does not belong in a series that keeps getting smaller.

111. B — Each number is double the previous one plus 1: 2 doubled is 4, plus 1 is 5, then 11, then 23. Doubling 23 gives 46, plus 1 is 47. The choice 46 forgets the final add. The choice 49 adds 3, and 35 adds 12, so neither follows the double-and-add-1 pattern.

112. C — The steps grow by 1 each time: add 1, add 2, add 3, add 4. The next step is 5, so 14 plus 5 equals 19. The choice 18 adds only 4, repeating the last step, and 20 adds 6, which is too big. The choice 24 adds 10, which is much more than the growing steps allow.

113. D — The pattern alternates between doubling and subtracting 1: 3 doubles to 6, drops to 5, doubles to 10, drops to 9, doubles to 18. The next step is to subtract 1, so 18 becomes 17. The choice 36 doubles again, and 19 and 21 add to 18 instead. Only 17 follows that pattern of doubling and subtracting.

114. C — Two series are woven together. The numbers in odd places go up by 7, which are 7, 14, 21, and the ones in even places go down by 10, which are 100, 90, 80. The next term is in an odd place, so it is 21 plus 7, or 28. The choice 70 belongs to the other series.

115. B — The terms are 1 times 1, 2 times 2, 3 times 3, 4 times 4, and 5 times 5, so the next is 6 times 6, which is 36. The gaps grow by 2, so the next gap is 11, and 25 plus 11 is 36. The choices 30 and 35 add too little, and 49 jumps ahead.

116. A — Each number is 3 times the one before it, minus 2: 2 becomes 4, then 10, then 28, then 82. Tripling 82 gives 246, and subtracting 2 gives 244. The choice 246 forgets the subtraction. The choice 164 only doubles 82, and 242 subtracts 4 instead of 2, so neither fits the rule.

117. C — The pattern alternates between adding 3 and doubling: 4 plus 3 is 7, doubled is 14, plus 3 is 17, doubled is 34, plus 3 is 37. The next step is to double, so 37 becomes 74. The choice 40 adds 3 again, which repeats the last step. The choice 71 subtracts 3 and 68 doubles the wrong number.

118. B — Each number is half of the previous one, plus 2: half of 36 is 18, plus 2 is 20, then 12, then 8, then 6. Half of 6 is 3, plus 2 is 5. The choice 4 comes from halving twice, and 3 forgets the added 2. The choice 7 adds 2 only.

119. D — In the top row the circle keeps its shape but grows from small to large. The bottom row follows the same rule, so the small square must become a large square. A small square just repeats the

left box, a large circle copies the top row's shape, and a large triangle uses a shape that appears nowhere in the grid.

120. A — In the top row the shading flips from black to white while the shape stays the same. The bottom row must do the same job in reverse, so the white square becomes a black square. A white square repeats the left box, a black circle uses the wrong shape, and a white circle has both mistakes.

121. A — Each row grows from small to medium to large while the shape stays the same. The top row uses stars and the bottom row uses hearts, so the missing figure is a large heart. A medium heart repeats the middle box, and the large star and small star use the star shape, which belongs only to the top row.

122. B — In the top row the arrow turns one quarter turn clockwise, from up to right. The bottom row follows the same turn, so down turns clockwise to left. An arrow pointing down would mean no turn at all. An arrow pointing up or right would be a half turn or a counterclockwise turn, and neither matches the top row.

123. C — The top row doubles the number of figures from one to two and keeps the same color and shape. The bottom row must double its white triangle, giving two white triangles. Two black triangles changes the color, one white triangle repeats the left box, and two white dots changes the shape.

124. D — Each column keeps its shape and the bottom row turns the same shape black. The third column holds a triangle in the top row, so the bottom must hold a black triangle. A white triangle would not change color. A black circle repeats the first column, and a black pentagon introduces a shape that never appears in the grid.

125. D — The right box in the top row mirrors the left box, with the dot moving from the left corner to the right corner on the same level. The bottom row does the same, so the square moves from bottom-left to bottom-right. The other choices keep the left corner or move the square up.

126. B — The top row adds exactly one dot inside the figure and keeps the shape the same. The bottom row follows that rule, so the small triangle gets one dot. Two dots adds too many, a square with a dot changes the shape, and a triangle with no dot adds nothing, so only one dot in a triangle matches.

127. C — Each row counts up by one from left to right, and the bottom row uses dots instead of lines. After one dot and two dots comes three dots. Four dots skips a number, three lines uses the wrong kind of mark, and two dots repeats the middle box, so none of them continues the count properly.

128. A — In every row the arrow turns a quarter turn clockwise from one box to the next. The bottom row goes from right to down, so the next turn gives left. An arrow pointing up, right, or down repeats a direction already seen in that row, which would mean the turn stopped or went the wrong way.

129. B — The top row moves the shape one side clockwise, from the top side to the right side. Going clockwise from the left side leads to the top side, so the triangle moves to the top. The right side skips a position, the bottom side moves the wrong way, and the left side shows no move at all.

130. A — Each row and each column uses a circle, a square, and a triangle exactly once. Row 3 already shows a triangle and a circle, so the square is missing. A circle or triangle would appear twice in the row, and a diamond is a shape that is never used anywhere in the grid.

131. C — Each row counts up by one star from left to right, and each row begins with one more star than the row above. Row 3 reaches four stars in the middle, so the last box needs five. Six stars jumps too far, and three or four stars would repeat or fall back in a row that is growing.

132. D — Each row keeps one shape and uses white, gray, and black exactly once. Row 3 holds triangles and already has black and white, so gray is missing. A gray square uses the wrong shape, and a white or black triangle would repeat a shade that is already in the row.

133. B — In every row the third box combines the first two boxes. Row 1 joins the dot and square, and row 2 joins the triangle and circle, so row 3 must join the star and heart. A star alone or a heart alone shows only one of them, and two stars leaves out the heart.

134. D — In each row the third box holds the total of the first two boxes, because 2 plus 3 is 5 and 1 plus 4 is 5. Row 3 has 3 plus 2, which is 5. Six dots adds one too many, one dot gives the difference instead of the total, and four dots would be wrong for the same reason.

135. A — Two things change in each row. The arrow turns a quarter turn clockwise and the number of lines grows by one. From down with two lines the next box turns to left and has three lines. Left with two lines forgets the extra line, and the other choices keep the wrong direction.

136. C — Every row adds one more line from left to right, first a vertical line and then a horizontal one, using the same shape across the row. Row 3 uses triangles, so the last box needs both lines. A triangle with no lines or one line repeats an earlier box, and a square with both lines belongs to row 2.

137. C — Each row and column holds a circle, a square, and a triangle, with one white, one gray, and one black. Row 3 already has a triangle and a circle, so it needs a square, and its white and gray shades are used, so it must be black. The gray and white squares repeat a shade.

138. B — The number of sides rises by one from left to right in every row. Row 1 goes 3, 4, 5, and row 2 goes 4, 5, 6, so row 3 goes 5, 6, 7. The missing figure has seven sides. Eight sides skips a number, and six or five sides repeats a figure already in the row.

139. D — Folding the sheet in half once makes two layers of paper. A single punch goes through both layers, so opening the sheet shows one hole in each half, which is 2 holes in all. One hole forgets the second layer, while 3 and 4 holes count layers that do not exist in a single fold.

140. A — One fold makes two layers, so every punch makes two holes when the paper is opened. Two punches therefore make 2 times 2, which is 4 holes. Two holes counts only the punches and ignores the second layer. Three holes does not match any multiplication of the numbers, and six holes would need three layers.

141. B — A letter fold stacks the sheet into three layers, and one punch goes through every layer. Each layer shows its own hole when the sheet is opened, so there are 3 holes. One hole ignores the layers, two holes would need only two layers, and six holes would need the punch to be made twice.

142. D — Two folds make four layers, and each layer shows one hole after the sheet is opened, so 4 holes appear, one in each quarter of the sheet. One hole counts the punch alone, and 2 holes counts only a single fold. Eight holes would need three folds, which this question does not have.

143. A — One fold makes two layers, so each of the three punches makes two holes. That gives 3 times 2, or 6 holes. Three holes counts only the punches, and 4 holes does not match the layers or the punches. Nine holes would need three layers, which would be a letter fold rather than a half fold.

144. C — The hole is near the fold, and the fold becomes the middle line of the sheet. Folding makes a mirror image across that line, so one hole appears just above the middle and one just below, both on the left side. The other choices move the holes to the edges, use only one hole, or place them in the center.

145. C — The fold becomes the center line of the sheet, and the hole is near the open right edge. Its mirror image on the left half lands near the left edge at the same height. So there are two holes at middle height, one near each edge. The other choices keep one hole, crowd the center, or stack the holes.

146. B — Folding in half twice makes four layers, and every punch goes through all four of them. Two punches therefore make 4 times 2, which is 8 holes. Two holes counts only the punches, four holes counts only the layers, and six holes comes from adding the layers to the punches instead of multiplying.

147. D — A letter fold gives three layers, and each of the four punches goes through every layer. That means 3 times 4, which is 12 holes. Four holes counts only the punches. Seven holes adds the layers to the punches instead of multiplying, and sixteen holes would need four layers. Only 12 matches.

148. A — A corner-to-corner fold makes two layers, so the punch makes two holes. The diagonal fold line acts like a mirror, so the holes land on opposite sides of that line at equal distances. Both holes on one side ignores the mirror, a single hole needs a punch on the fold, and four holes needs another fold.

149. B — Each punch makes a mirror pair across the center fold. The hole near the fold makes two holes close together at the center, and the hole near the open edge makes one hole near each edge. All four lie in the same middle row. Two holes ignores the mirror pairs, and the other choices misplace the holes.

150. D — Two folds make four layers, and each of the five punches goes through all of them. That gives 4 times 5, which is 20 holes. Five holes counts only the punches. Nine holes adds the layers to the punches instead of multiplying, and sixteen holes comes from multiplying four layers by four punches, which miscounts the punches.

151. C — The folded edge becomes the center line of the sheet when it is opened. A half circle cut from that edge joins its mirror image to make one whole circle, so a single round hole sits in the middle. The other choices put notches on the outer edges, split the circle into two holes, or leave only half a shape.

152. A — The bottom-right corner of the small square is the bottom-right corner of the whole sheet. Each fold mirrors the hole, so four holes appear, one near each corner of the sheet. Holes near the center

would need the punch near the folds. A row across the middle or only one hole does not match two mirrored folds.

153. A — The top-left corner of the small square is where both folds meet, which is the center of the sheet. A hole near that point is mirrored four times, so four holes sit close together around the center. Corner holes would need the punch near the open corner, and a row or a single hole does not fit two folds.

154. B — The bottom edge of the small square is the bottom edge of the whole sheet, and the hole is halfway along it. Mirroring across the top-to-bottom fold gives a hole near the top edge, and mirroring across the side fold gives a left and right pair. So two holes sit near the top edge and two near the bottom edge.

155. D — The cut triangle has its flat side on the fold, which becomes the middle line of the sheet. When the paper opens, the cut triangle joins its mirror image along that flat side, making a diamond. A single triangle forgets the mirror, two separate triangles would need a gap, and a square has the wrong number of points.

156. C — Two folds make four layers, and the fold lines are the two diagonals of the square. Each layer is one of the four triangles made by those diagonals, so one hole appears in each triangle. Two holes would need one fold, and eight holes would need three folds. Holes on the same diagonal ignore that the folds are mirrors.

157. A — The top edge of the small square is the top-to-bottom fold, which becomes the middle horizontal line of the sheet. A hole on that fold does not double across the line, but the left-to-right fold still gives a left and right pair. So two holes sit on the middle horizontal line. The other choices miscount or use the wrong line.

158. D — All three figures are circles, though their sizes and shades all differ, so the shape is the only thing they share. A medium black circle is also a circle. The square and the triangle have straight sides, so they break the rule, even when their size or shade matches one of the first three.

159. B — The three figures have different sizes and shadings, so the shared feature is the triangle shape with exactly three sides. A medium gray triangle has that shape. A square has four sides, a circle has none, and a pentagon has five, so each of those choices breaks the shared rule even though sizes and shades can differ.

160. C — Every figure has exactly five straight sides, so it is a pentagon, even when it is small, tilted, or has a mark inside. A pentagon with a line inside keeps that shape. The hexagon has six sides, the rectangle has four, and the triangle has three, so none of them matches the first three.

161. A — All three figures have four equal sides, so they are squares, and the shade does not matter here. A white square keeps the shape. A rectangle has two longer sides, a triangle has only three sides, and a circle has no straight sides, so those three choices do not share the square shape.

162. D — Each of the three figures has only curved edges with no corners. A wide flat oval is also all curves and has no corners. The triangle, the square, and the hexagon are built from straight sides that meet at corners, so they do not share the smooth curved quality of the first three.

163. C — Every figure is split into one black half and one white half, whatever its outer shape. A star that is half black and half white matches that rule. An all black star and an all white star have just one shade, and a star covered with dots uses a pattern instead of black and white halves.

164. B — The shared rule is that only the bottom half of each figure is black. A hexagon with a black bottom half matches. A black top half or a black left half puts the shading in a different place, and an all black hexagon is shaded everywhere, so none of those three follows the first three.

165. D — The outer shape changes, so the shared feature is the number of dots, which is exactly two in every figure. A star with two dots inside matches. A star with one dot, three dots, or no dots has a different count, so each of those choices breaks the pattern even though the outer shape is the same.

166. B — Each figure is cut by exactly one straight line, no matter what its outer shape is. A hexagon with one line across it matches. Two lines or three lines add too many cuts, and no lines leaves the figure uncut, so none of those choices follows the shared rule of the first three.

167. C — In all three figures the dot touches the outline of the shape. A star with a dot on its edge follows that same pattern. A dot inside the star floats away from the outline, a dot far outside is not touching, and a star with no dot has no dot to touch, so those three fail.

168. A — Each figure shows three copies of one shape, with two black and one white. Two black stars and one white star keeps that mix. Two white stars and one black star reverses the mix, three black stars has no white one, and one black star with one white star has only two copies, so none of those match.

169. A — Every figure is a row of three matching shapes with exactly one black and two white, though the black one moves. Three stars with only one black fits that rule. All white has no black one and two black has too many. Two stars in a row has the wrong number of shapes, so only the correct choice matches.

170. C — In each figure two shapes meet at a single point without overlapping. A star just touching a circle follows that pattern. A large overlap covers an area instead of one point, a star inside a circle is surrounded rather than touching, and shapes far apart do not meet, so those three do not match.

171. B — In each figure the number of dots equals the number of sides, as three, four, and five. A hexagon has six sides, so it needs six dots. Four dots or five dots repeats a count from an earlier figure, and seven dots is one more than the number of sides, so only six dots matches the pattern.

172. D — Each figure shows exactly three matching shapes nested like a set of bowls, each inside the next. Three diamonds nested one inside the next fits. Three diamonds in a row or in a tower are separate, not nested, and two diamonds nested has only two shapes, so none of those match the first three.

173. B — A heart, a butterfly, and a kite can each be folded down the middle so that the two halves match exactly. A leaf with matching halves has the same mirror symmetry. A crooked lightning bolt and

a lopsided blob have uneven sides, and a curly snail shell spirals, so none of them can be folded to match.

174. A — The corner counts of four, six, and ten are all even numbers, so being even is the shared feature. Eight is even, so a figure with eight corners belongs. Three, five, and nine are odd numbers, which means those figures break the pattern, even though each one has a number of corners close to the others.

175. D — Each figure has one flat side and one rounded side. A flat-based dome has the same mix of a straight bottom and a curved top. A full circle is curved everywhere, a plain square is straight everywhere, and a pointed triangle has only straight sides, so none of those three combines a flat side with a curve.

176. C — A triangle is drawn with three straight lines, the letter Z uses three straight strokes, and the letter N also uses three. The letter H also uses three strokes, two tall lines and one crossbar. The letter X uses two strokes, the letter E uses four, and a square has four sides.