

# PRACTICE EXAM 5: CCAT-7

## MULTILEVEL SIMULATION (176 QUESTIONS)

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### Section 1: Verbal Analogies (Questions 1–24)

Directions: In each question below, the first two words go together in a certain way. Choose the answer that goes with the third word in the same way.

1. brick : wall :: plank : \_\_\_\_\_

- A. tree
- B. fence
- C. nail
- D. saw
- E. wood

2. heel : shoe :: eraser : \_\_\_\_\_

- A. rubber
- B. mistake
- C. paper
- D. pencil
- E. desk

3. key : lock :: password : \_\_\_\_\_

- A. secret
- B. keyboard

C. computer

D. letter

E. memory

4. stem : flower :: trunk : \_\_\_\_\_

A. car

B. suitcase

C. bark

D. root

E. tree

5. blizzard : snow :: monsoon : \_\_\_\_\_

A. rain

B. wind

C. cloud

D. hot

E. season

6. librarian : library :: captain : \_\_\_\_\_

A. uniform

B. crew

C. ocean

D. ship

E. anchor

7. claw : eagle :: tusk : \_\_\_\_\_

A. ivory

B. elephant

- C. white
- D. horn
- E. large

8. rehearsal : performance :: draft : \_\_\_\_\_

- A. wind
- B. pencil
- C. paper
- D. rough
- E. final copy

9. lens : camera :: antenna : \_\_\_\_\_

- A. insect
- B. metal
- C. radio
- D. tower
- E. signal

10. whisper : shout :: drizzle : \_\_\_\_\_

- A. downpour
- B. rain
- C. cloud
- D. umbrella
- E. wet

11. wax : candle :: clay : \_\_\_\_\_

- A. dig
- B. brown

- C. mud
- D. pottery
- E. wet

12. cage : bird :: stable : \_\_\_\_\_

- A. sturdy
- B. horse
- C. barn
- D. hay
- E. farm

13. compass : north :: clock : \_\_\_\_\_

- A. face
- B. hands
- C. wall
- D. round
- E. time

14. camouflage : hide :: binoculars : \_\_\_\_\_

- A. magnify
- B. far
- C. eyes
- D. bird
- E. lens

15. island : ocean :: planet : \_\_\_\_\_

- A. moon
- B. star

- C. space
- D. orbit
- E. round

16. predator : prey :: teacher : \_\_\_\_\_

- A. school
- B. book
- C. classroom
- D. student
- E. lesson

17. thimble : finger :: crown : \_\_\_\_\_

- A. king
- B. head
- C. gold
- D. jewel
- E. throne

18. drought : water :: famine : \_\_\_\_\_

- A. hunger
- B. disease
- C. poor
- D. dry
- E. food

19. constellation : star :: bouquet : \_\_\_\_\_

- A. flower
- B. vase

- C. gift
- D. pretty
- E. smell

20. root : plant :: foundation : \_\_\_\_\_

- A. concrete
- B. deep
- C. building
- D. strong
- E. ground

21. chapter : novel :: verse : \_\_\_\_\_

- A. rhyme
- B. line
- C. word
- D. poem
- E. song

22. oyster : pearl :: mine : \_\_\_\_\_

- A. dark
- B. diamond
- C. deep
- D. coal
- E. dig

23. fossil : dinosaur :: footprint : \_\_\_\_\_

- A. shoe
- B. sand

- C. ground
- D. path
- E. person

24. yawn : tired :: shiver : \_\_\_\_\_

- A. cold
- B. fear
- C. shake
- D. winter
- E. body

## Section 2: Sentence Completion (Questions 25–44)

Directions: In each question below, choose the word that best completes the sentence.

25. The gymnast performed a series of \_\_\_ flips and twists, landing perfectly each time without a single wobble.

- A. clumsy
- B. slow
- C. flawless
- D. dangerous
- E. confusing

26. After the wildfire swept through the valley, the once-green landscape was left \_\_\_ and covered in grey ash.

- A. blooming
- B. frozen
- C. flooded
- D. bright

E. scorched

27. The veterinarian \_\_\_\_ the injured puppy's broken leg by wrapping it in a plaster cast and prescribing rest.

A. treated

B. ignored

C. worsened

D. photographed

E. celebrated

28. The deep-sea explorer discovered creatures that were completely \_\_\_\_ to science, never before recorded in any textbook.

A. familiar

B. boring

C. common

D. unknown

E. obvious

29. Despite the heavy rain, the determined hikers \_\_\_\_ to climb the trail and eventually reached the mountain peak.

A. refused

B. persisted

C. forgot

D. stopped

E. failed

30. The thick castle walls were built to be \_\_\_\_, capable of resisting even the most powerful siege weapons of the era.

A. decorative

B. thin

C. impenetrable

D. fragile

E. transparent

31. The panda bear is an \_\_\_ species, with fewer than two thousand individuals remaining in the wild worldwide.

A. abundant

B. ordinary

C. invasive

D. common

E. endangered

32. The scientist's theory was \_\_\_ by the experimental results, which matched her predictions exactly as she expected.

A. confirmed

B. rejected

C. ignored

D. weakened

E. delayed

33. The tropical storm intensified rapidly and was officially \_\_\_ a hurricane when its wind speeds exceeded a specific threshold.

A. reduced

B. forgotten

C. celebrated

D. classified

E. prevented

34. The ancient Egyptians \_\_\_ enormous pyramids using millions of stone blocks, each weighing several tonnes on average.

A. destroyed

- B. constructed
- C. buried
- D. photographed
- E. discovered

35. The new medicine proved to be very \_\_\_\_, curing the illness in most patients within just a few days of treatment.

- A. expensive
- B. dangerous
- C. effective
- D. rare
- E. confusing

36. The spy's message was written in \_\_\_\_ language that only someone with the correct decoding key could understand.

- A. simple
- B. loud
- C. friendly
- D. ordinary
- E. encrypted

37. The river current was too \_\_\_\_ for the inexperienced swimmers, so the lifeguard asked them to stay in the shallow area.

- A. slow
- B. warm
- C. shallow
- D. strong
- E. clear

38. The artist used only natural materials found in the forest to \_\_\_\_ a sculpture that blended perfectly with its surroundings.

- A. create
- B. destroy
- C. hide
- D. purchase
- E. photograph

39. The two countries signed a \_\_\_\_ agreement, promising to end the conflict and work together peacefully from that point forward.

- A. temporary
- B. peace
- C. secret
- D. brief
- E. military

40. The child's fever \_\_\_\_ during the night, dropping from a worrying high temperature back to normal by early morning.

- A. increased
- B. spread
- C. worsened
- D. remained
- E. subsided

41. The glacier moves at an incredibly \_\_\_\_ pace, advancing only a few centimetres each day despite its enormous size.

- A. rapid
- B. dangerous
- C. slow
- D. loud

E. smooth

42. The architect designed the new building to be environmentally \_\_\_\_, using solar panels and recycled materials throughout.

A. harmful

B. expensive

C. old

D. friendly

E. dangerous

43. The witness provided a \_\_\_\_ description of the suspect, including height, clothing, and a distinctive scar on the chin.

A. detailed

B. vague

C. whispered

D. cheerful

E. brief

44. The experienced pilot remained calm during the turbulence, \_\_\_\_ the frightened passengers that the aircraft was perfectly safe.

A. frightening

B. reassuring

C. confusing

D. ignoring

E. questioning

### **Section 3: Verbal Classification (Questions 45–60)**

Directions: The three words in each question below go together in some way. Choose the answer that belongs with them.

45. eagle, hawk, falcon

A. feather

B. nest

C. fly

D. beak

E. owl

46. maple, oak, pine

A. birch

B. forest

C. leaf

D. wood

E. bark

47. Mars, Venus, Mercury

A. star

B. moon

C. telescope

D. Earth

E. orbit

48. stove, oven, microwave

A. food

B. kitchen

C. cooking appliance

D. heat

E. recipe

49. Atlantic, Pacific, Indian

- A. continent
- B. Arctic
- C. whale
- D. water
- E. ship

50. violin, trumpet, drum

- A. band
- B. concert
- C. note
- D. sound
- E. saxophone

51. Ottawa, Tokyo, London

- A. Paris
- B. country
- C. city
- D. map
- E. travel

52. granite, marble, slate

- A. heavy
- B. building
- C. mineral
- D. rock
- E. grey

53. evaporation, freezing, melting

- A. water
- B. temperature
- C. phase change
- D. science
- E. ice

54. pentagon, hexagon, octagon

- A. circle
- B. heptagon
- C. angle
- D. line
- E. shape

55. herbivore, omnivore, carnivore

- A. animal
- B. jungle
- C. food
- D. predator
- E. insectivore

56. novel, poem, essay

- A. written work
- B. library
- C. reading
- D. author
- E. page

57. watt, volt, ampere

- A. number
- B. science
- C. wire
- D. electrical unit
- E. battery

58. peninsula, plateau, valley

- A. mountain
- B. geography
- C. landform
- D. river
- E. map

59. parliament, congress, senate

- A. president
- B. legislative body
- C. democracy
- D. vote
- E. country

60. chlorophyll, photosynthesis, stomata

- A. animal
- B. water
- C. science
- D. soil
- E. plant biology term

## QUANTITATIVE BATTERY

**Recommended Time: 30 Minutes — 54 Questions**

**Do not turn back to the Verbal Battery or go ahead to the Nonverbal Battery.**

### Section 4: Number Analogies (Questions 61–78)

Directions: In each question below, the numbers in the first two pairs follow the same rule. Find the number that completes the third pair using the same rule.

61.  $[6 \rightarrow 24] [9 \rightarrow 36] [5 \rightarrow ?]$

- A. 10
- B. 15
- C. 20
- D. 25
- E. 30

62.  $[24 \rightarrow 12] [18 \rightarrow 9] [30 \rightarrow ?]$

- A. 15
- B. 10
- C. 60
- D. 6
- E. 20

63.  $[3 \rightarrow 7] [8 \rightarrow 17] [5 \rightarrow ?]$

- A. 10
- B. 12
- C. 13
- D. 15
- E. 11

64.  $[4 \rightarrow 16] [6 \rightarrow 36] [8 \rightarrow ?]$

A. 24

B. 32

C. 48

D. 64

E. 80

65.  $[17 \rightarrow 12] [23 \rightarrow 18] [31 \rightarrow ?]$

A. 21

B. 26

C. 36

D. 25

E. 24

66.  $[3 \rightarrow 27] [4 \rightarrow 64] [5 \rightarrow ?]$

A. 15

B. 25

C. 125

D. 50

E. 75

67.  $[2 \rightarrow 7] [4 \rightarrow 13] [6 \rightarrow ?]$

A. 19

B. 12

C. 18

D. 24

E. 15

68.  $[36 \rightarrow 6]$   $[64 \rightarrow 8]$   $[81 \rightarrow ?]$

A. 3

B. 27

C. 12

D. 18

E. 9

69.  $[5 \rightarrow 9]$   $[8 \rightarrow 15]$   $[12 \rightarrow ?]$

A. 20

B. 16

C. 18

D. 23

E. 24

70.  $[9 \rightarrow 10]$   $[20 \rightarrow 21]$   $[45 \rightarrow ?]$

A. 50

B. 46

C. 44

D. 90

E. 47

71.  $[2 \rightarrow 14]$   $[5 \rightarrow 35]$   $[4 \rightarrow ?]$

A. 20

B. 8

C. 28

D. 32

E. 16

72.  $[3 \rightarrow 11] [5 \rightarrow 17] [8 \rightarrow ?]$

A. 26

B. 24

C. 23

D. 27

E. 16

73.  $[120 \rightarrow 30] [80 \rightarrow 20] [60 \rightarrow ?]$

A. 10

B. 12

C. 20

D. 6

E. 15

74.  $[7 \rightarrow 49] [11 \rightarrow 121] [6 \rightarrow ?]$

A. 12

B. 18

C. 42

D. 36

E. 24

75.  $[14 \rightarrow 9] [22 \rightarrow 17] [19 \rightarrow ?]$

A. 24

B. 14

C. 13

D. 12

E. 15

76.  $[1 \rightarrow 6] [3 \rightarrow 16] [2 \rightarrow ?]$

- A. 8
- B. 12
- C. 11
- D. 10
- E. 14

77.  $[45 \rightarrow 9] [30 \rightarrow 6] [55 \rightarrow ?]$

- A. 11
- B. 5
- C. 10
- D. 15
- E. 45

78.  $[8 \rightarrow 19] [3 \rightarrow 9] [6 \rightarrow ?]$

- A. 12
- B. 18
- C. 14
- D. 16
- E. 15

**Section 5: Number Series (Questions 79–96)**

Directions: In each question below, a sequence of numbers follows a pattern. Find the number that comes next or fills the missing position.

79. 6, 12, 18, 24, ?

- A. 26
- B. 28

C. 32

D. 30

E. 36

80. 4, 12, 36, 108, ?

A. 216

B. 324

C. 144

D. 432

E. 120

81. 95, 85, 75, 65, ?

A. 55

B. 50

C. 45

D. 60

E. 40

82. 2, 3, 5, 9, 17, ?

A. 25

B. 26

C. 30

D. 34

E. 33

83. 7, 14, 28, 56, ?

A. 84

B. 70

C. 112

D. 64

E. 98

84. 11, 22, 33, 44, ?

A. 48

B. 50

C. 54

D. 55

E. 66

85. 1, 8, 27, 64, ?

A. 81

B. 125

C. 100

D. 216

E. 128

86. 320, 160, 80, 40, ?

A. 20

B. 30

C. 10

D. 25

E. 35

87. 1, 5, 13, 25, 41, ?

A. 49

B. 53

C. 57

D. 55

E. 61

88. 2, 6, 12, 20, 30, ?

A. 36

B. 40

C. 42

D. 44

E. 38

89. 243, 81, 27, 9, ?

A. 6

B. 1

C. 4

D. 3

E. 0

90. 1, 4, 10, 20, 35, ?

A. 50

B. 56

C. 45

D. 60

E. 48

91. 15, 30, 45, 60, ?

A. 75

B. 70

C. 65

D. 80

E. 90

92. 1, 1, 2, 3, 5, 8, 13, 21, ?

A. 26

B. 29

C. 30

D. 33

E. 34

93. 72, 67, 62, 57, ?

A. 50

B. 55

C. 52

D. 48

E. 54

94. 2, 5, 11, 23, 47, ?

A. 70

B. 71

C. 94

D. 95

E. 93

95. 4, 16, 64, 256, ?

A. 512

B. 1024

- C. 320
- D. 768
- E. 1280

96. 1, 3, 7, 15, 31, ?

- A. 63
- B. 47
- C. 62
- D. 48
- E. 64

**Section 6: Number Puzzles (Questions 97–114)**

Directions: In each question below, find the number that makes the equation true.

97.  $13 + ? = 29$

- A. 42
- B. 16
- C. 15
- D. 17
- E. 26

98.  $? \times 9 = 81$

- A. 8
- B. 72
- C. 7
- D. 10
- E. 9

99.  $52 - ? = 27$

A. 79

B. 24

C. 25

D. 26

E. 35

100.  $91 \div ? = 7$

A. 13

B. 7

C. 84

D. 14

E. 9

101.  $? + 34 = 51$

A. 85

B. 27

C. 15

D. 17

E. 21

102.  $9 \times ? = 108$

A. 11

B. 12

C. 99

D. 9

E. 13

103.  $7 \times ? - 4 = 38$

- A. 5
- B. 7
- C. 42
- D. 34
- E. 6

104.  $? - 29 = 44$

- A. 15
- B. 63
- C. 73
- D. 75
- E. 83

105.  $6 \times 9 = ? + 19$

- A. 35
- B. 54
- C. 73
- D. 25
- E. 44

106.  $\blacktriangle + \blacktriangle + \blacktriangle + \blacktriangle = 52$ . What is  $\blacktriangle$ ?

- A. 4
- B. 26
- C. 52
- D. 13
- E. 17

107.  $132 \div ? = 11$

- A. 11
- B. 12
- C. 121
- D. 10
- E. 13

108.  $4 \times ? + 7 = 43$

- A. 8
- B. 10
- C. 36
- D. 50
- E. 9

109.  $? + ? + 13 = 37$ . What is ?

- A. 24
- B. 37
- C. 12
- D. 13
- E. 25

110.  $72 \div 6 = ? - 8$

- A. 20
- B. 4
- C. 12
- D. 14
- E. 6

111.  $\star + \star = 30$ .  $\star \times 3 = ?$

- A. 10
- B. 30
- C. 60
- D. 45
- E. 90

112.  $19 + ? = 8 \times 4$

- A. 32
- B. 13
- C. 51
- D. 12
- E. 45

113.  $(? + 7) \times 3 = 33$

- A. 26
- B. 11
- C. 8
- D. 33
- E. 4

114.  $144 \div 12 = ? + 7$

- A. 5
- B. 12
- C. 19
- D. 7
- E. 17

**NONVERBAL BATTERY**

**Recommended Time: 30 Minutes — 62 Questions**

**Do not turn back to the Quantitative Battery.**

**Section 7: Figure Matrices (Questions 115–136)**

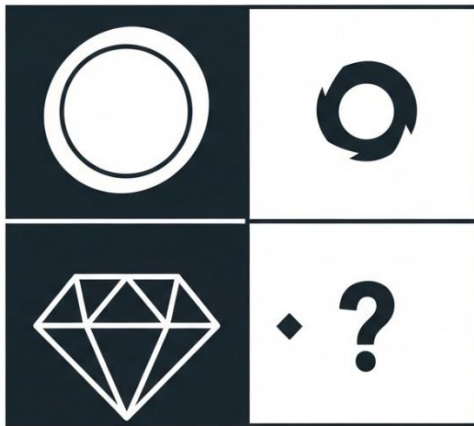
Directions: In each question below, the shapes in the boxes follow a rule. Find the shape that completes the pattern in the empty box.

115. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. a black-filled oval
- B. a white-outlined oval
- C. a black-filled triangle
- D. a white-outlined triangle
- E. a striped oval

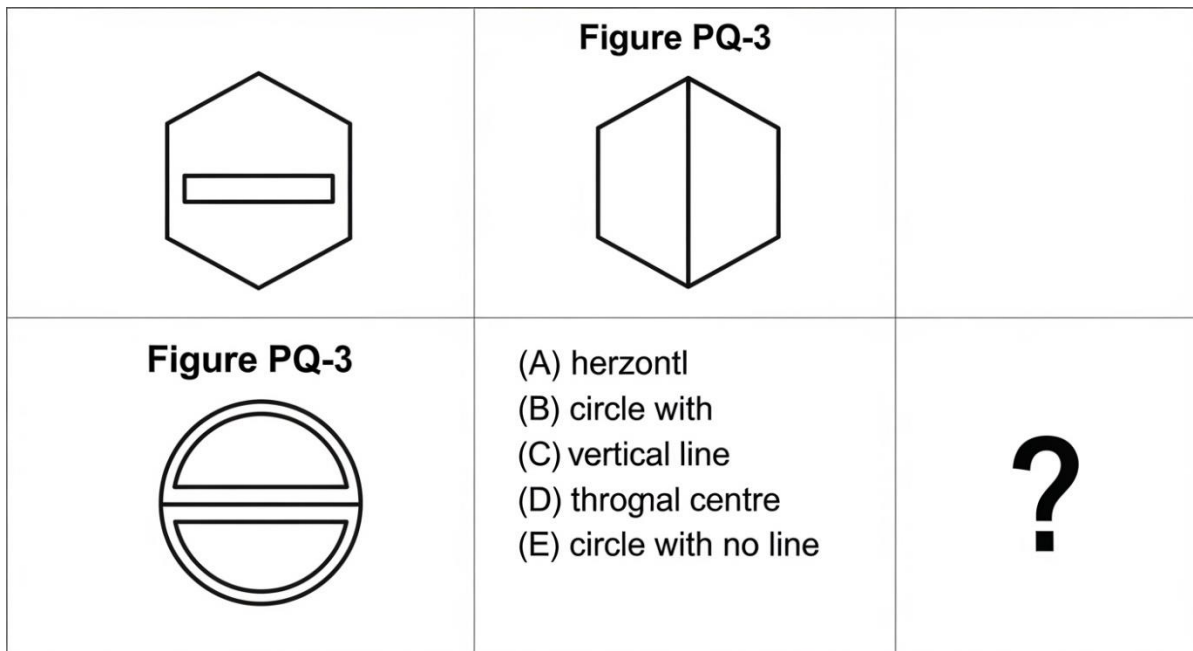
116. Look at the shapes in the grid below. Which answer choice completes the grid?



- (A) (B) Optiblack diamond (D) (E) Circle

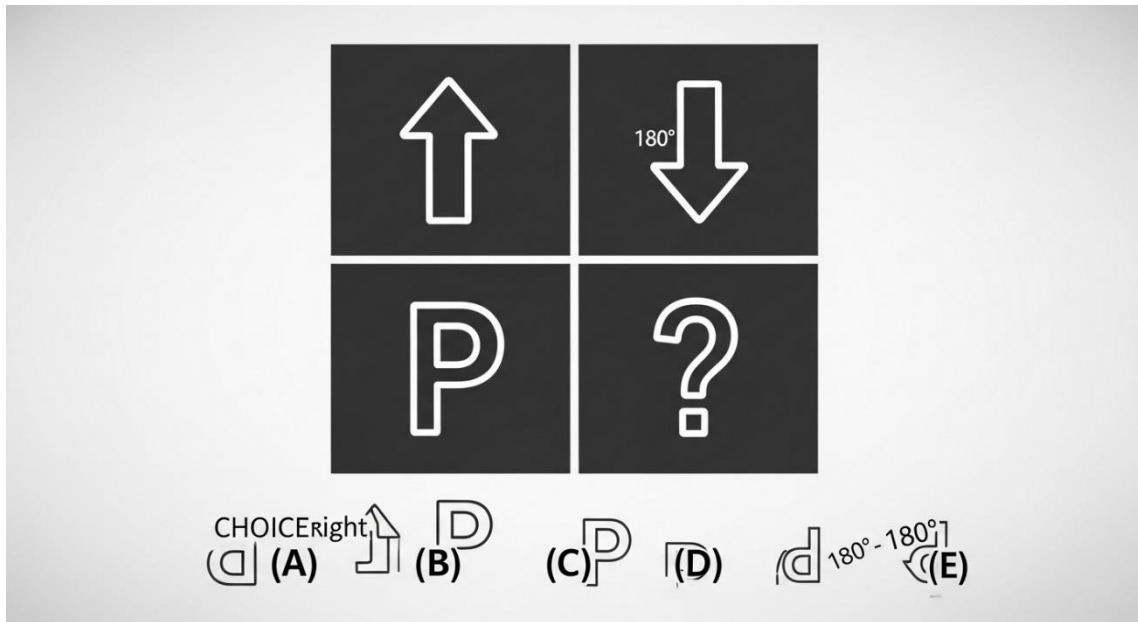
- A. a large white diamond
- B. a small black diamond
- C. a large black diamond
- D. a small white-outlined diamond
- E. a small white circle

117. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. circle with horizontal line
- B. hexagon with vertical line
- C. a circle with a vertical line through centre
- D. circle with diagonal line
- E. circle with no line

118. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. a "P" facing right
- B. a "P" upside down
- C. an arrow pointing down
- D. a "P" facing left
- E. a "P" rotated 180°





119. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. a striped pentagon
- B. a black-filled pentagon
- C. a white pentagon
- D. a black-filled square
- E. a striped circle

120. Look at the shapes in the grid below. Which answer choice completes the grid?

Figure PQ-6

(A) circle with shouge inside

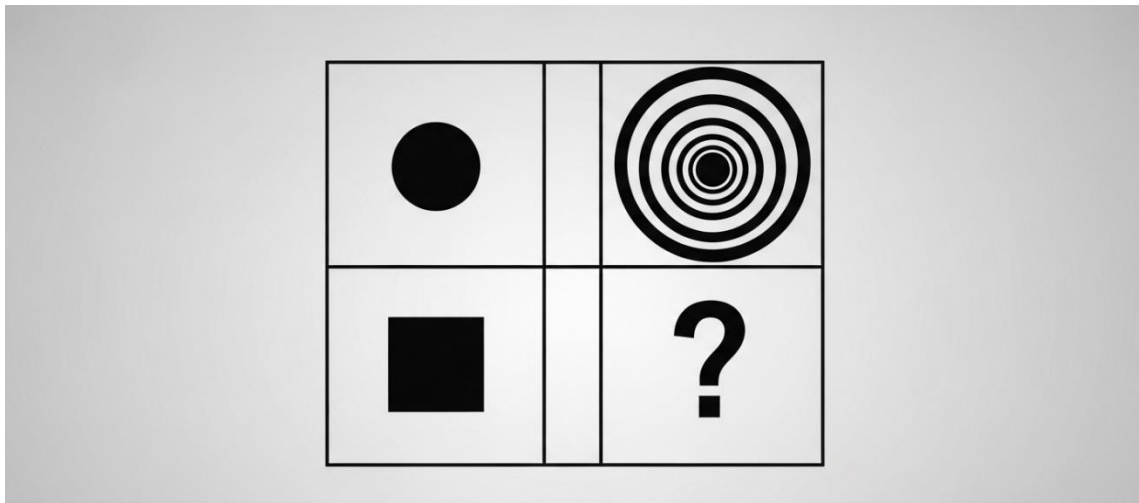
(B) squcle with no shape

(D) circle with squire inside

(E) triAngle, withe no shape

- A. a circle with no shape inside
- B. a circle with a triangle inside
- C. a square with no shape
- D. a circle with a square inside
- E. a triangle with no shape

121. Look at the shapes in the grid below. Which answer choice completes the grid?

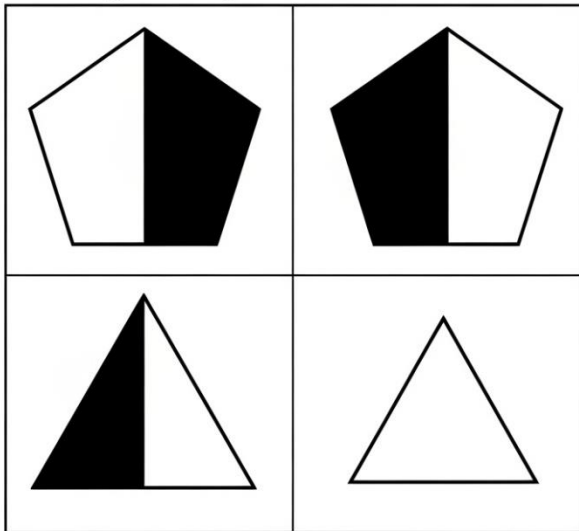


(A) one square (B) two concentric squares (C) one circle (D) three concentric squares (E) three concentric circles

- A. one square
- B. two concentric squares
- C. one circle
- D. three concentric squares
- E. three concentric circles

122. Look at the shapes in the grid below. Which answer choice completes the grid?

Figure PQ-8



?

Answers

- (A) Triangle left black
- (B) Triangle with its right black
- (D) Triangle with no shading
- (E) Triangle with top black

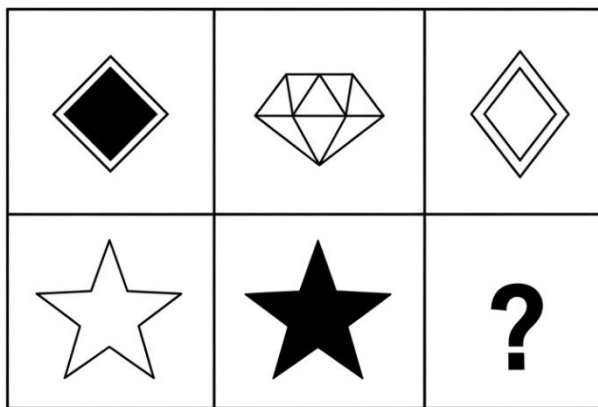
- A. triangle with left half black
- B. pentagon with right half black
- C. a triangle with its right half shaded black
- D. triangle with no shading
- E. triangle with top half black





123. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. circle containing "2"
- B. hexagon containing "4"
- C. circle containing "6"
- D. circle containing "3"
- E. a circle containing "4"

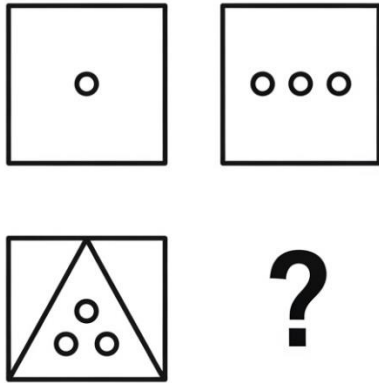
124. Look at the shapes in the grid below. Which answer choice completes the grid?



- (A)  (B)  white diamond (D)  circle (E) 

- A. a black star
- B. a white-outlined star
- C. a white diamond
- D. a black circle
- E. a striped star

125. Look at the shapes in the grid below. Which answer choice completes the grid?



**Figure PQ-11**

- (A)
- (B) Square
- (C) Triangle with one dot
- (D) Triangle with two dots
- (E) A Triangle with no dots

- A. a triangle with three small dots in a row
- B. a square with three dots
- C. a triangle with one dot
- D. a triangle with two dots
- E. a triangle with no dots

126. Look at the shapes in the grid below. Which answer choice completes the grid?

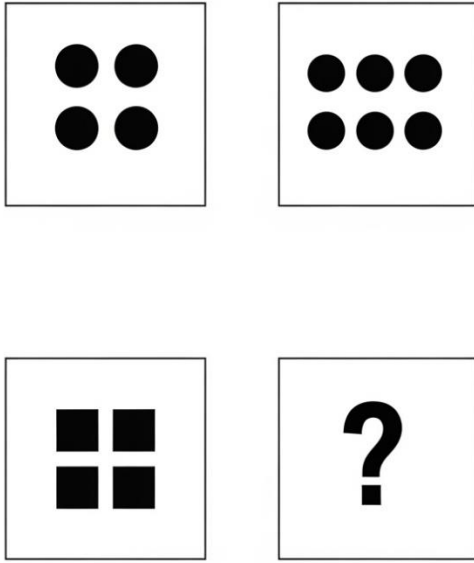
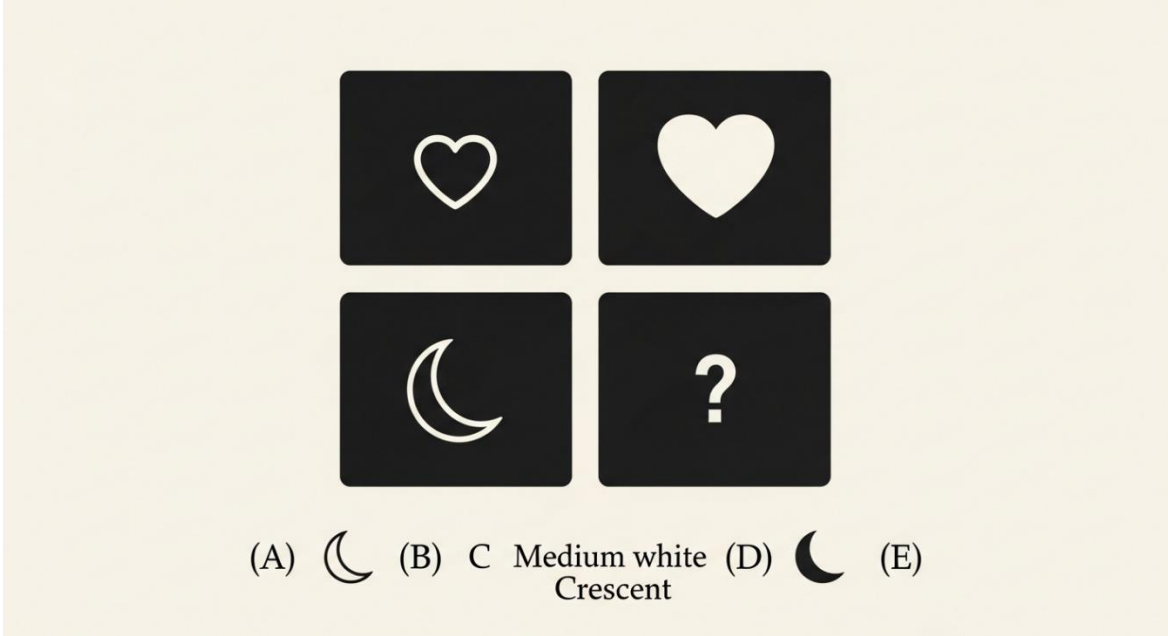


Figure PQ-12

- (A) 4 black squares 2x2
- (B) 4 coroles 2x3
- (C) 8ight squares 2x4
- (D) tight black squares 2x4
- (D) 6 small black squares in 23 patturm
- (E) 6 black triangles 2x3

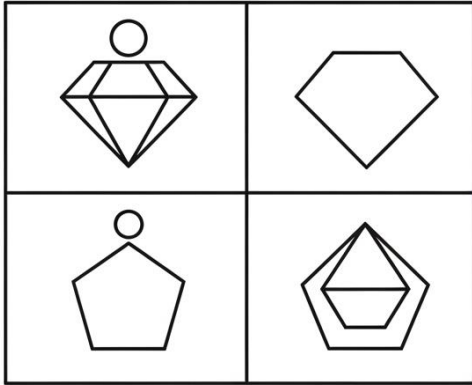
- A. four black squares 2x2
- B. six black circles 2x3
- C. eight black squares 2x4
- D. six small black squares in a 2x3 pattern
- E. six black triangles 2x3

127. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. a small white crescent
- B. a large white crescent
- C. a medium white-outlined crescent
- D. a medium white heart
- E. a medium black crescent

128. Look at the shapes in the grid below. Which answer choice completes the grid?



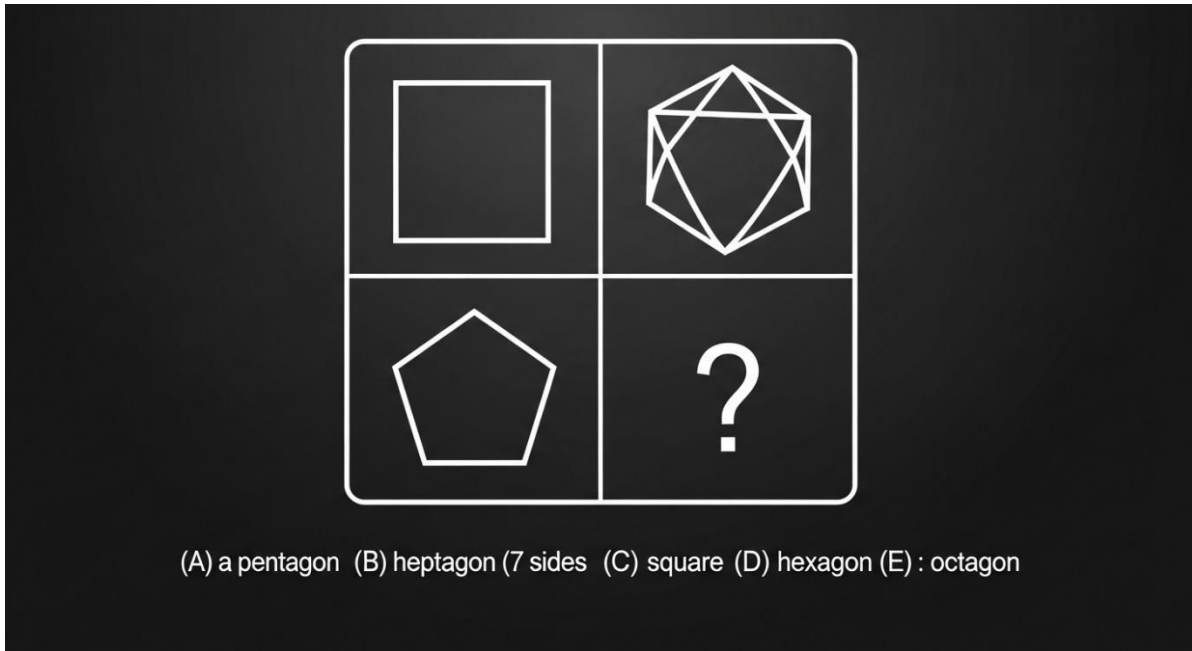
**Figure PQ-14**

- (A)
- (B) Diamond Sthoners
- (C) (B) Diamond with no shupe top
- (D) (D) pentagon with  sop
- (E) pentagon no shupe ond top

?

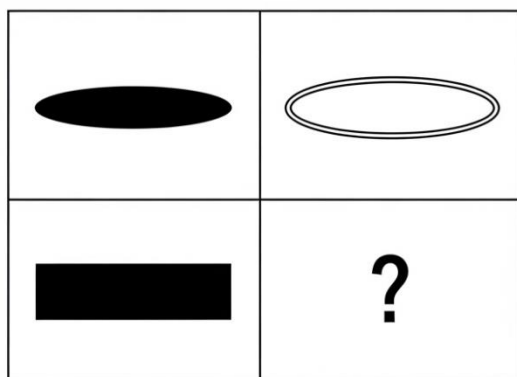
- A. pentagon with circle on top
- B. pentagon with triangle on top
- C. diamond with no shape on top
- D. pentagon with square on top
- E. a pentagon with no shape on top





129. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. a pentagon
- B. a heptagon (7 sides)
- C. a square
- D. a hexagon
- E. an octagon

130. Look at the shapes in the grid below. Which answer choice completes the grid?

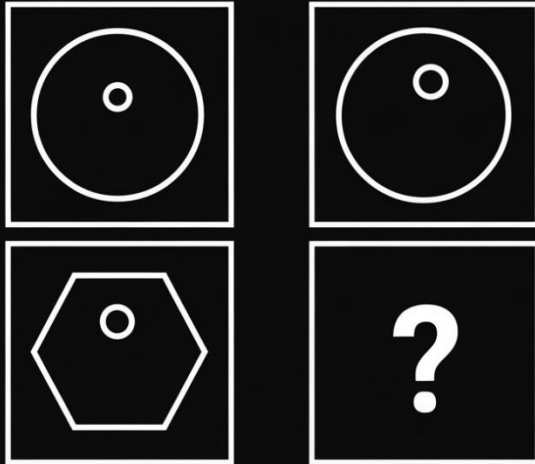


- (A)  (B)  (C)  (D) 
- (A) Rectangle (B) Optiangle (D) White (E) Option  
Stritpes rectangle

- A. a white-outlined rectangle oriented horizontally
- B. a black rectangle
- C. a white oval
- D. a striped rectangle
- E. a black oval

131. Look at the shapes in the grid below. Which answer choice completes the grid?

**Figure PQ-17**

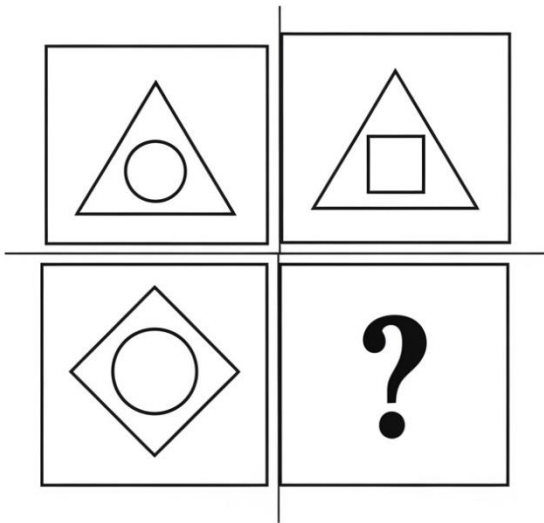


**Answers**





- (A) Hekegon with
- (B) Hekegon with uppera
- (C) circle in ○
- (D) Hekegon with a dot
- (D) Hekegon with, the uppera
- (E) Hekegon with no dot

- A. hexagon with dot in centre
- B. hexagon with dot in lower-right
- C. circle with dot in upper-right
- D. a hexagon with a dot in the upper-right area
- E. hexagon with no dot

132. Look at the shapes in the grid below. Which answer choice completes the grid?

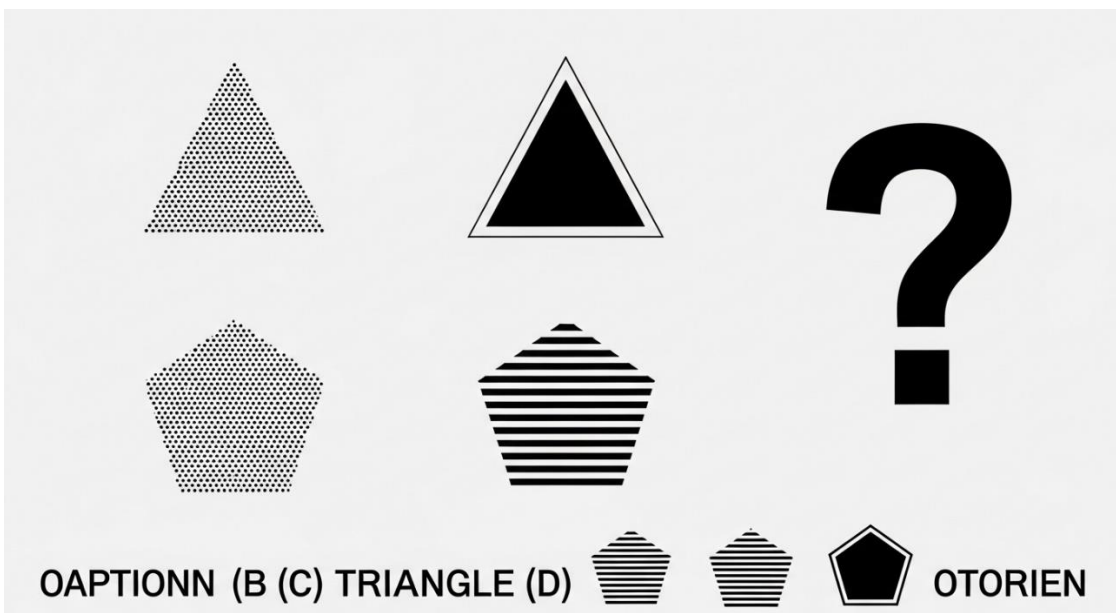


**Figure PQ-18**

- (A)  
- (B) Diamond containing a white outlined square
- (D) Diamond with triangle
- (E)  

- A. diamond with circle
- B. triangle with square
- C. a diamond containing a square
- D. diamond with triangle
- E. circle containing square

133. Look at the shapes in the grid below. Which answer choice completes the grid?



- A. dotted pentagon
- B. black pentagon
- C. dotted triangle
- D. striped pentagon
- E. a white-outlined pentagon

134. Look at the shapes in the grid below. Which answer choice completes the grid?

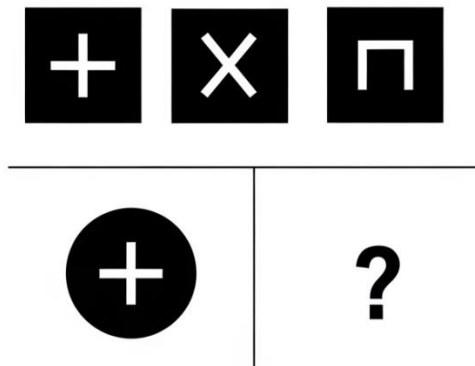


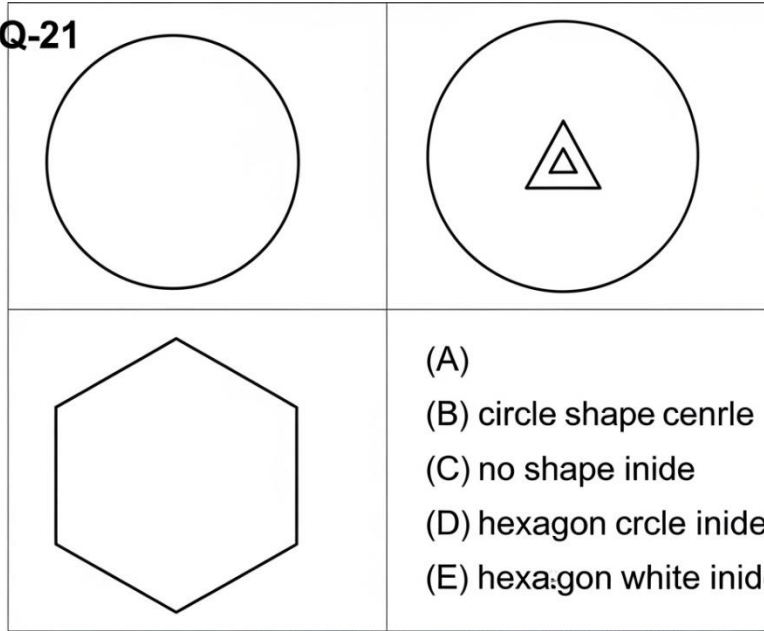
Figure PQ-20

- (A) ● +
- (B) ⊙ ✕
- (C) ⊖
- (D) ⊠ =
- (E) ○

- A. black circle with white "+"
- B. a black circle with a white "-" inside
- C. white circle with black "-"
- D. black square with white "-"
- E. black circle with no symbol

135. Look at the shapes in the grid below. Which answer choice completes the grid?

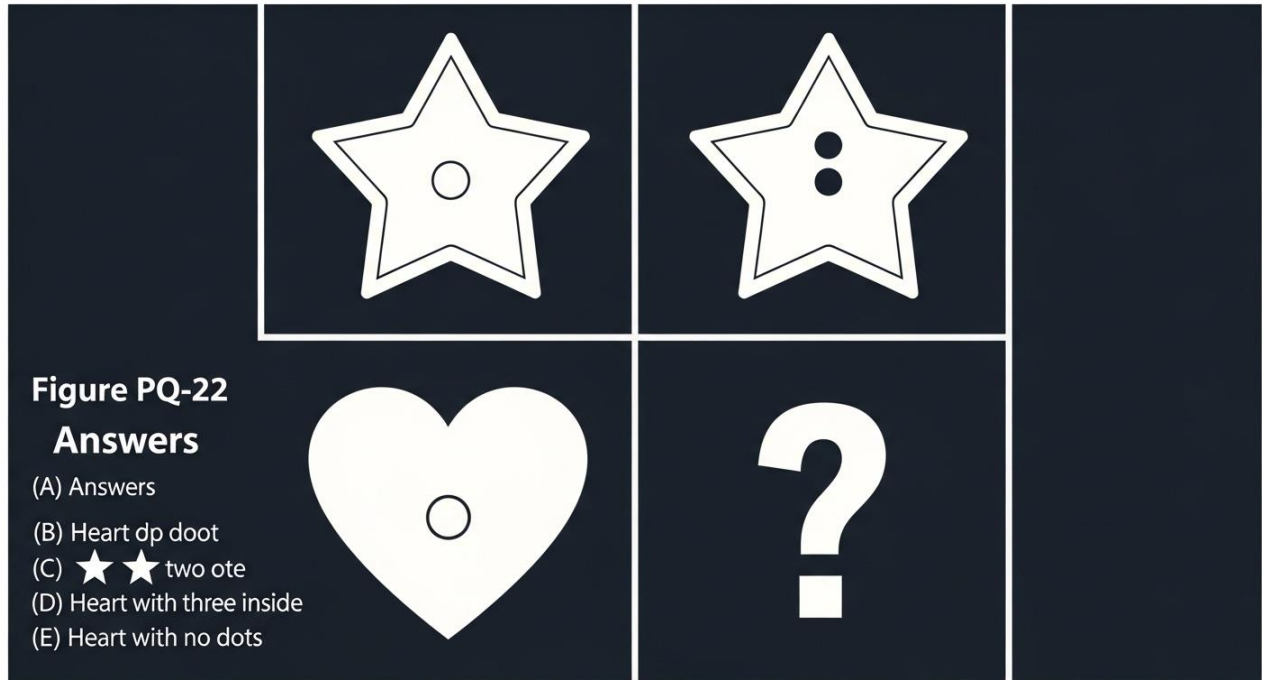
Figure PQ-21



?

- A. a hexagon with a small black triangle inside
- B. circle with small black triangle
- C. hexagon with no shape
- D. hexagon with small black circle
- E. hexagon with small white triangle

136. Look at the shapes in the grid below. Which answer choice completes the grid?

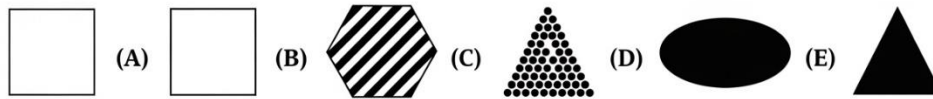
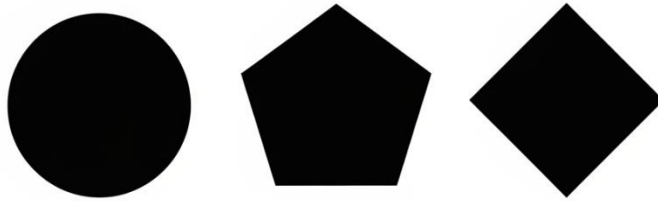


- A. heart with one dot
- B. heart with two dots
- C. star with three dots
- D. a heart with three dots inside
- E. heart with no dots

**Section 8: Figure Classification (Questions 137–158)**

Directions: In each question below, the three shapes at the top go together in some way. Choose the answer choice that goes with them.

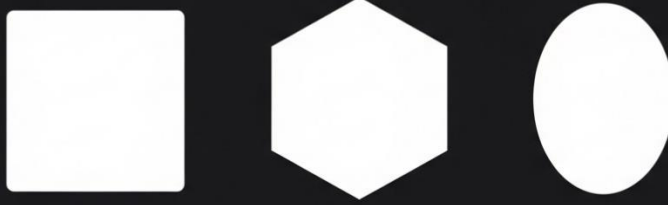
137. The three shapes are: a black-filled circle, a black-filled pentagon, a black-filled diamond — all solid black.



- A. white square
- B. striped hexagon
- C. dotted triangle
- D. black oval
- E. a black-filled triangle

138. The three shapes are: a large white-outlined square, a large white-outlined hexagon, a large white-outlined oval — all large and white-outlined.

PQ-24



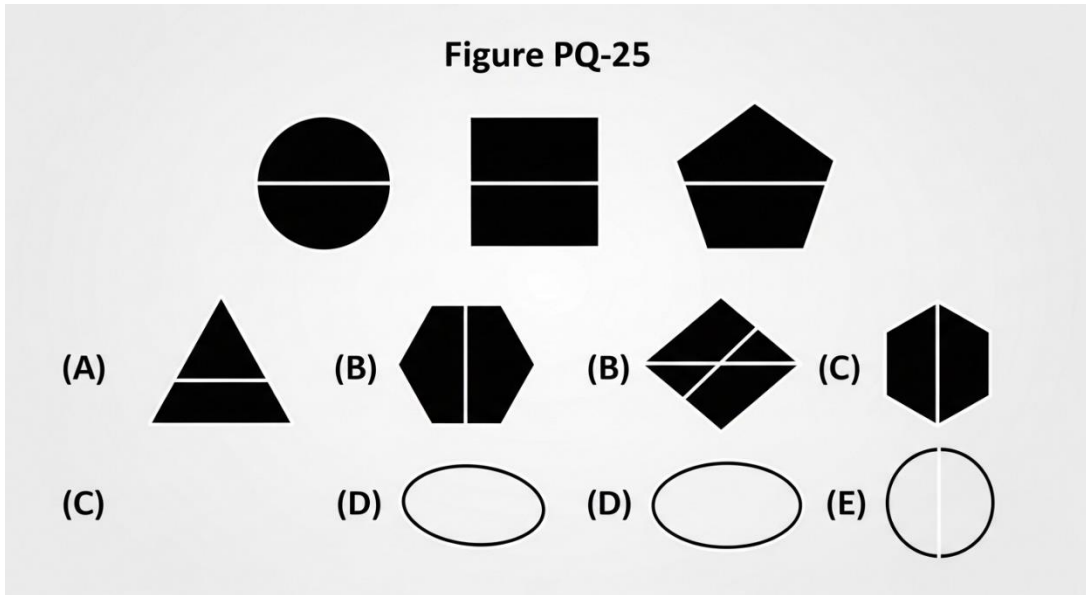
Five answers:

- (A) ○ white circle
- (B) large black triangle
- (C) large white-outlined triangle (hollow)
- (D) large striped pentagon white with stripes
- (E) ◆ diamond

- A. small white circle
- B. large black triangle
- C. a large white-outlined triangle
- D. large striped pentagon
- E. small black diamond

139. The three shapes are: a white-outlined circle with a horizontal line through centre, a white-outlined square with a horizontal line through centre, a white-outlined pentagon with a horizontal line through centre.

Figure PQ-25



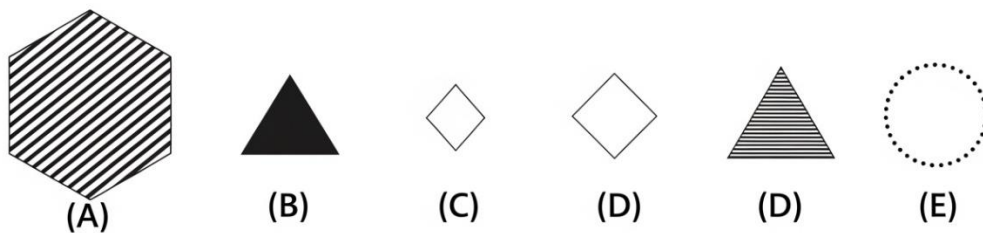
- A. a triangle with a horizontal line through centre
- B. hexagon with vertical line
- C. diamond with diagonal line
- D. oval with no line
- E. circle with vertical line

140. The three shapes are: a small striped circle, a small striped square, a small striped pentagon — all small and striped.

Figure PQ-26

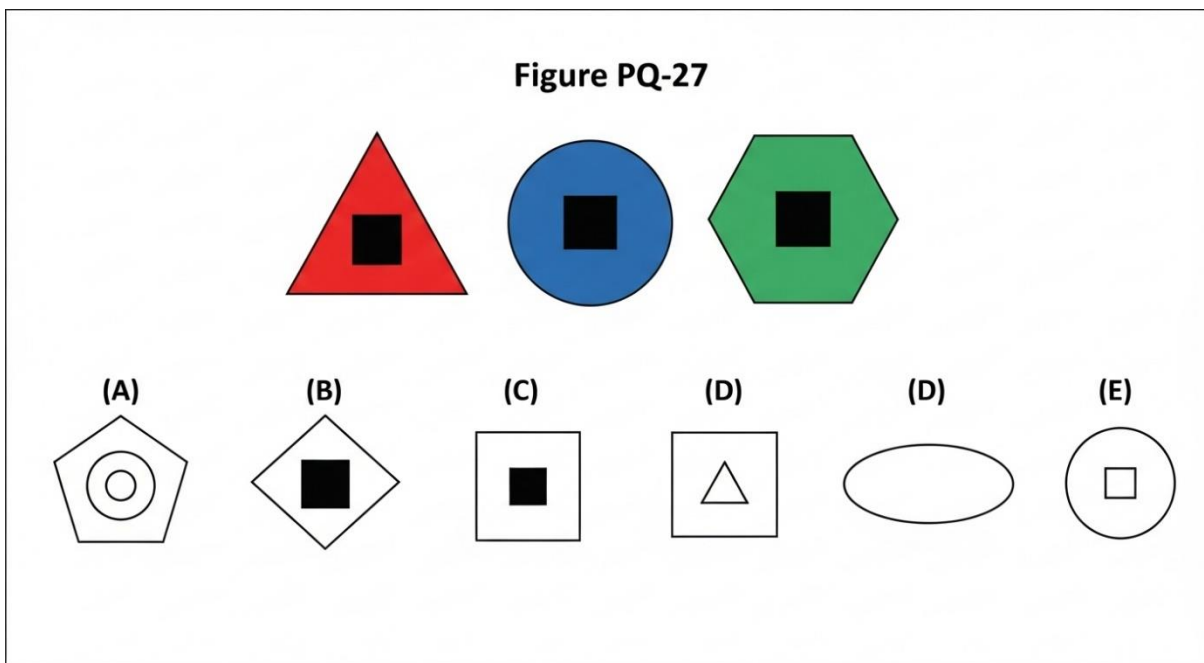


Answers



- A. large striped hexagon
- B. small black triangle
- C. small white diamond
- D. a small striped triangle
- E. small dotted circle

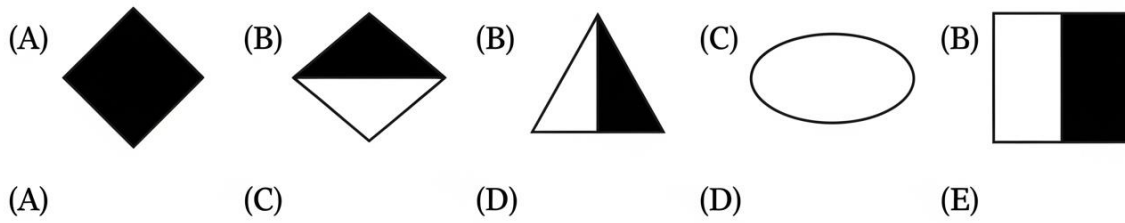
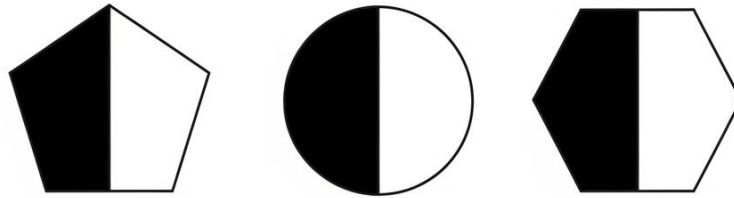
141. The three shapes are: a white-outlined triangle containing a small black-filled square inside, a white-outlined circle containing a small black-filled square inside, a white-outlined hexagon containing a small black-filled square inside.



- A. pentagon with black circle
- B. a diamond with a small black square inside
- C. square with black triangle
- D. oval with nothing
- E. circle with white square

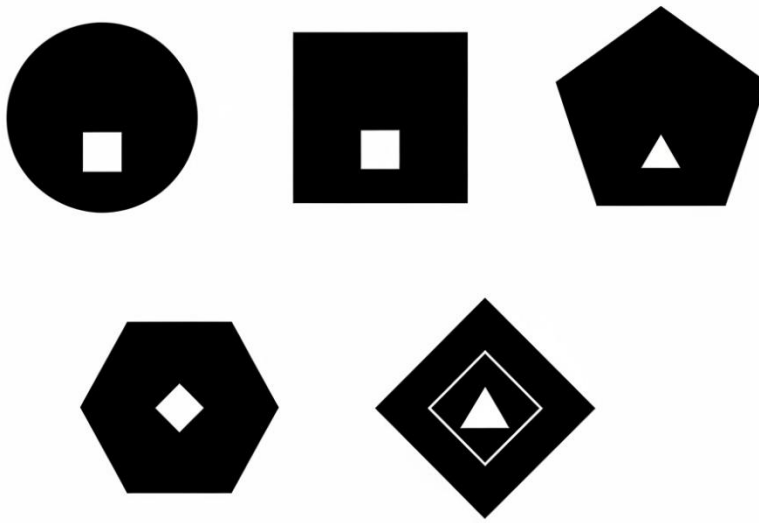
142. The three shapes are: a pentagon divided vertically — left half black, right half white; a circle divided vertically — left half black, right half white; a hexagon divided vertically — left half black, right half white.

Figure PQ-28



- A. fully black diamond
- B. diamond — top black, bottom white
- C. triangle — reversed halves
- D. fully white oval
- E. a square — left black, right white

143. The three shapes are: a large white-outlined circle with a small white-outlined triangle inside, a large white-outlined square with a small white-outlined triangle inside, a large white-outlined pentagon with a small white-outlined triangle inside.



| Figure PQ-29

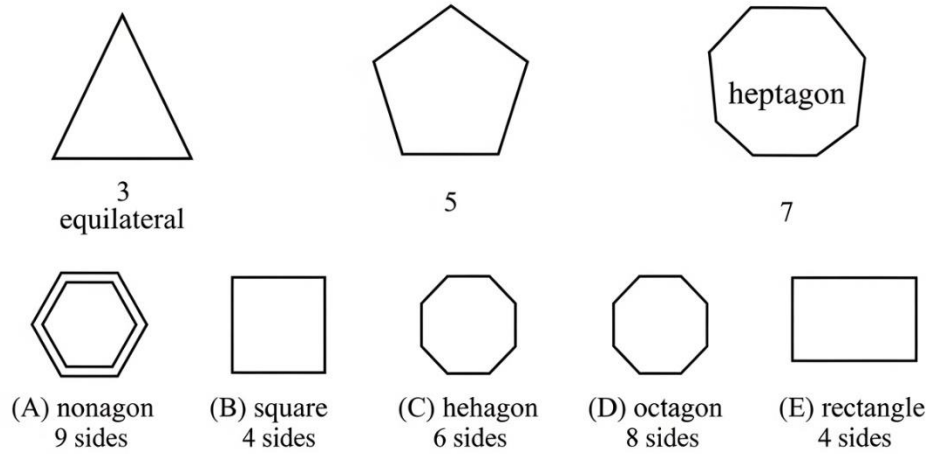
Answers

- (A) cotec
- (B) large ourned  
ournied white
- (C) large white shape
- (D) large ovel
- S) large white with
- (E) cirrcle inside

- A. hexagon with white square inside
- B. black diamond with white triangle
- C. a large white diamond with a small white triangle inside
- D. white oval with nothing
- E. white circle with white circle inside

144. The three shapes are: a white-outlined equilateral triangle (3 sides), a white-outlined pentagon (5 sides), a white-outlined heptagon (7 sides) — all odd-sided polygons.

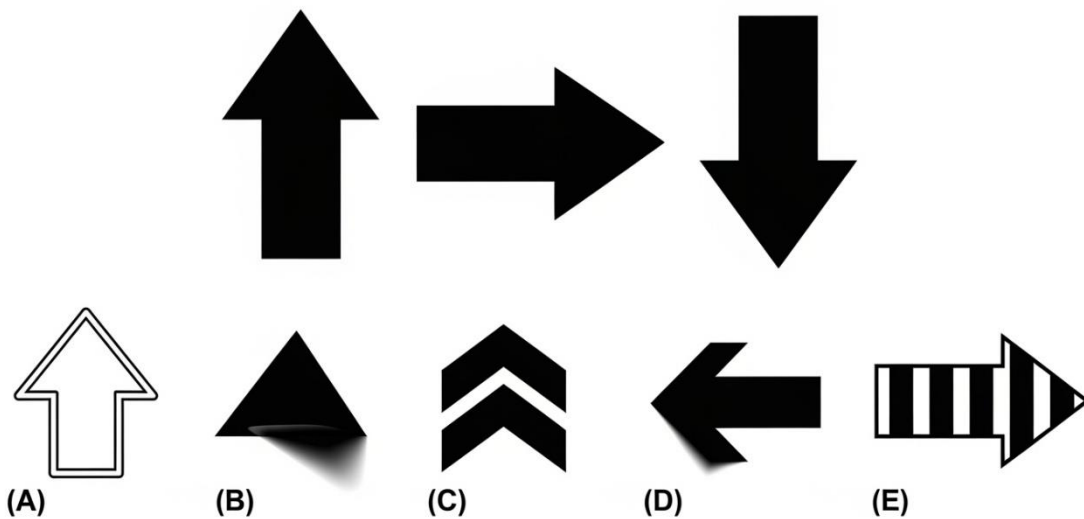
Figure PQ-30: Three shapes:



- A. a nonagon (9 sides)
- B. square (4 sides)
- C. hexagon (6 sides)
- D. octagon (8 sides)
- E. rectangle (4 sides)

145. The three shapes are: a large black-filled arrow pointing up, a large black-filled arrow pointing right, a large black-filled arrow pointing down.

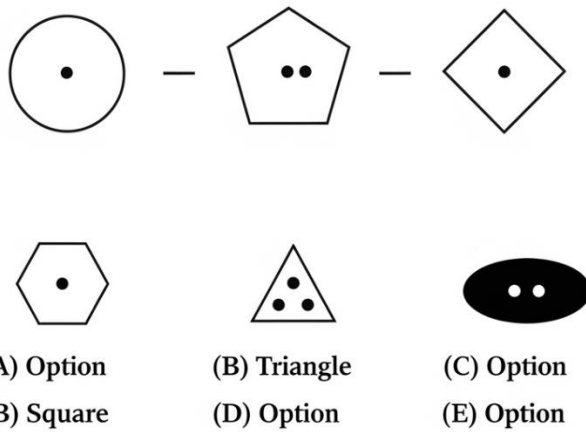
**PQ-31**



- A. white arrow pointing left
- B. black triangle pointing left
- C. black chevron pointing up
- D. a large black-filled arrow pointing left
- E. striped arrow pointing right

146. The three shapes are: a white-outlined circle with two dots inside, a white-outlined pentagon with two dots inside, a white-outlined diamond with two dots inside.

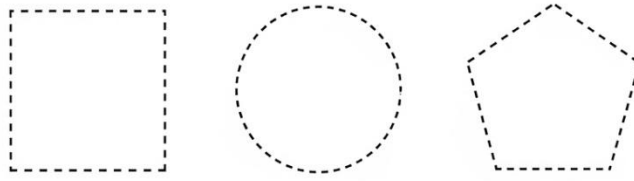
**PQ-32**



- A. hexagon with one dot
- B. a square with two dots inside
- C. triangle with three dots
- D. black oval with two dots
- E. oval with no dots

147. The three shapes are: a dashed-line square, a dashed-line circle, a dashed-line pentagon.

**Figure PQ-33**

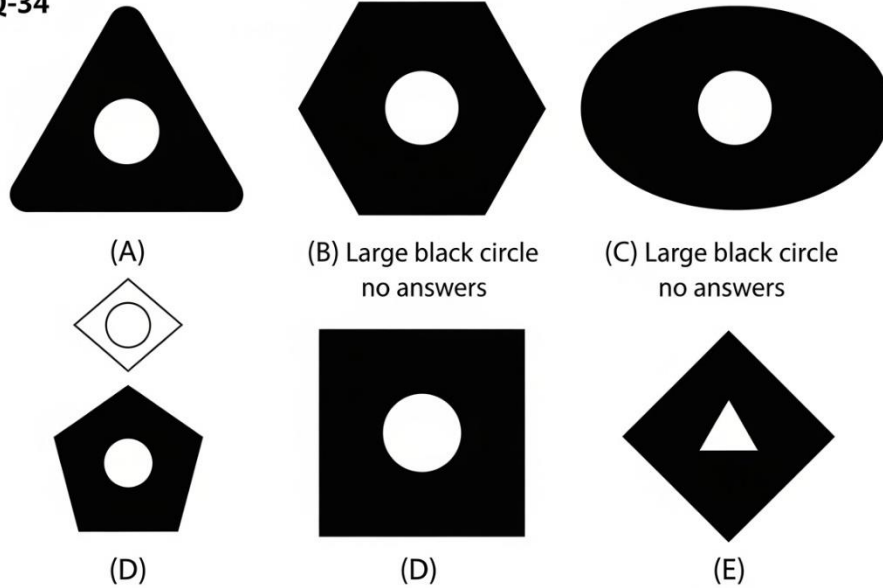


- (A) a solid-line hexxon
- (B) a dotted-line triangle
- (C) a solted-line
- (D) a solid-line circle
- (D) a dashed-line oval
- (E) a dashed-line triangle

- A. solid hexagon
- B. dotted triangle
- C. solid circle
- D. dashed oval
- E. a dashed-line triangle

148. The three shapes are: a large black-filled triangle with a white circle cut out of the centre, a large black-filled hexagon with a white circle cut out, a large black-filled oval with a white circle cut out.

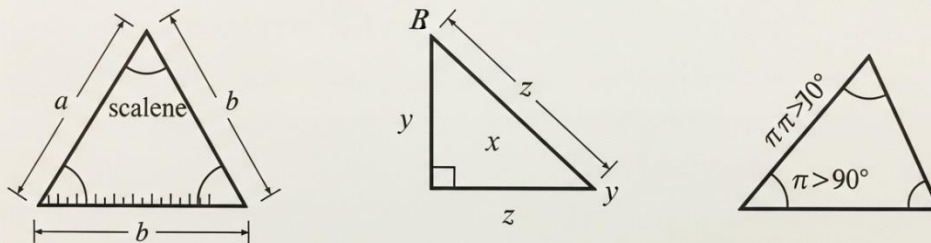
Figure PQ-34



- A. white diamond with black circle
- B. black circle with no hole
- C. a large black square with a white circle cut out
- D. small black pentagon with white circle
- E. black diamond with white triangle cut out

149. The three shapes are: a white-outlined scalene triangle, a white-outlined right triangle, a white-outlined obtuse triangle — all triangles.

Figure PQ-35

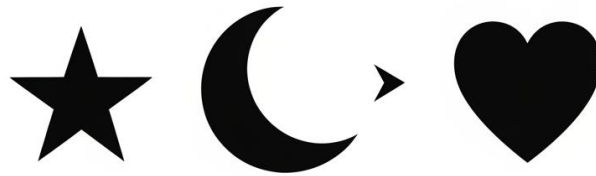


- (A) an isosceles triangle
- (B) a square
- (D) a diamond
- (E) a circle

- A. an isosceles triangle
- B. square
- C. pentagon
- D. diamond
- E. circle

150. The three shapes are: a medium black-filled star, a medium black-filled crescent, a medium black-filled heart — all medium and black-filled.

**PQ-36**



**Figure PQ-36**

- (A) a small black star
- (B) a medium white heart
- (C) a medium striped crescent
- (D) a medium black-filled lightning bolt
- (E) a large black star

- A. small black star
- B. medium white heart
- C. medium striped crescent
- D. a medium black lightning bolt
- E. large black star

151. The three shapes are: a large white-outlined square containing a small white-outlined circle, a large white-outlined triangle containing a small white-outlined circle, a large white-outlined diamond containing a small white-outlined circle.

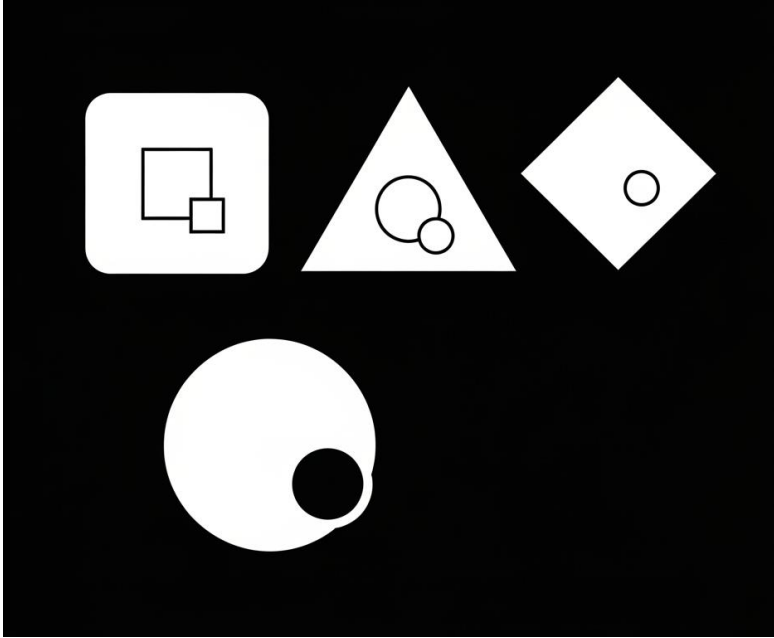
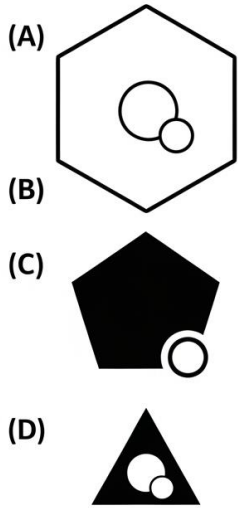


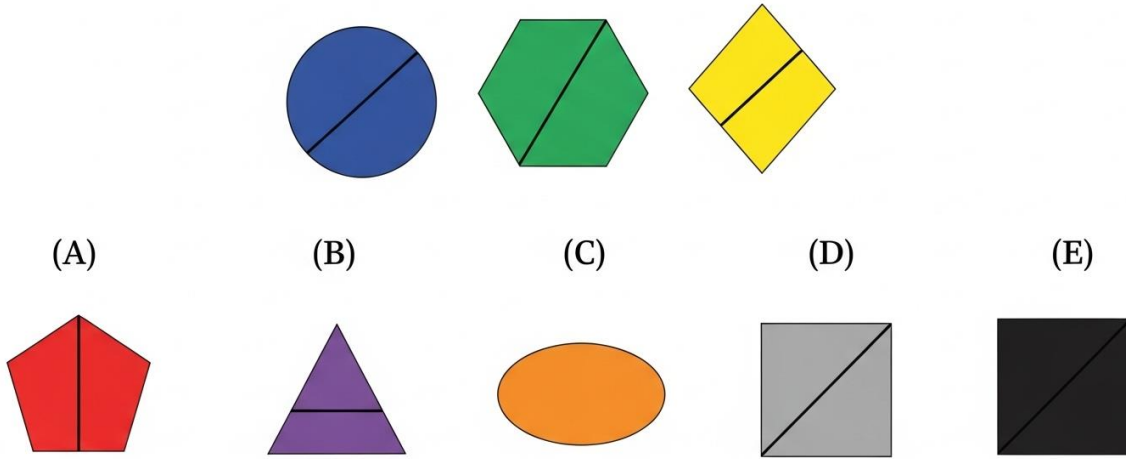
Figure PQ-37



- A. circle with white square
- B. a large white hexagon with a small white circle inside
- C. white oval with nothing
- D. black pentagon with white circle
- E. small triangle with white circle

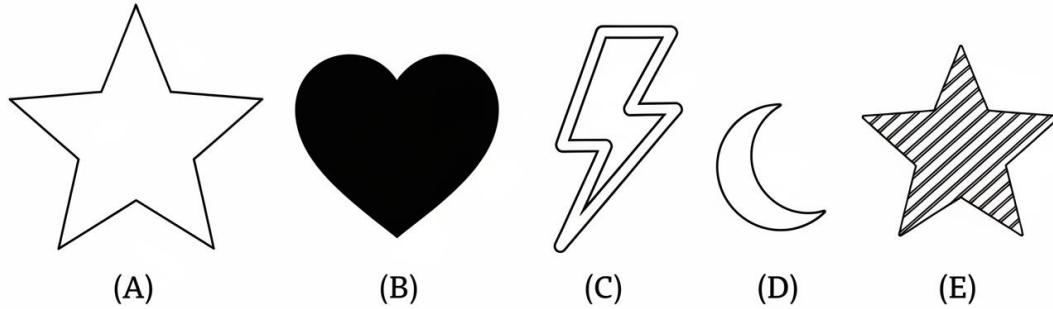
152. The three shapes are: a white-outlined circle with a diagonal line from upper-left to lower-right, a white-outlined hexagon with the same diagonal, a white-outlined diamond with the same diagonal.

**Figure PQ-38**



- A. pentagon with vertical line
- B. triangle with horizontal line
- C. oval with no line
- D. square with wrong diagonal
- E. a square with diagonal from upper-left to lower-right

153. The three shapes are: a medium white-outlined star, a medium white-outlined crescent, a medium white-outlined heart — all medium and white-outlined.

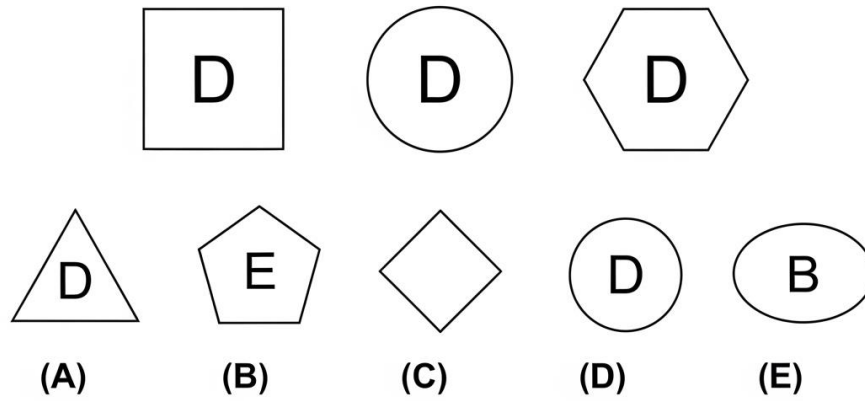


- A. large white star
- B. medium black heart
- C. a medium white lightning bolt
- D. small white crescent
- E. medium striped star

154. The three shapes are: a white-outlined square containing the letter "D", a white-outlined circle containing the letter "D", a white-outlined hexagon containing the letter "D."

PQ-40

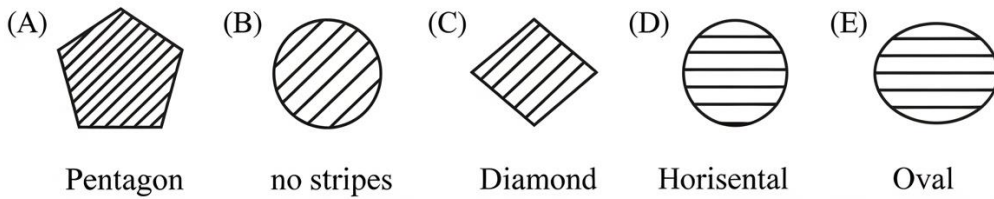
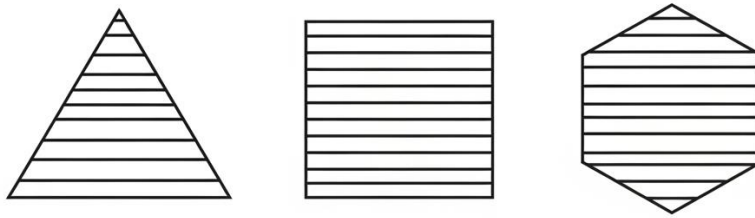
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- A. a triangle with "D" inside
- B. pentagon with "E"
- C. diamond with no letter
- D. circle with "D" again
- E. oval with "B"

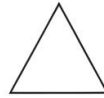
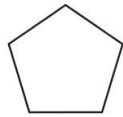
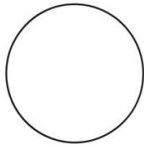
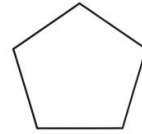
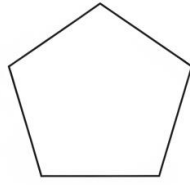
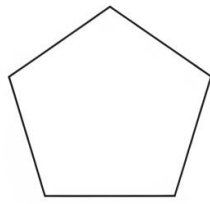
155. The three shapes are: a white-outlined triangle with horizontal stripes inside, a white-outlined square with horizontal stripes inside, a white-outlined hexagon with horizontal stripes inside.

**Figure PQ-41**



- A. pentagon with vertical stripes
- B. circle with diagonal stripes
- C. diamond with no stripes
- D. a circle with horizontal stripes inside
- E. oval with horizontal stripes

156. The three shapes are: a large white-outlined pentagon, a medium white-outlined pentagon, a small white-outlined pentagon — same shape, decreasing size.



(A) large circle

(B) tiny white pentagon

(D) large black pentagon

A. large white circle

B. a tiny white pentagon

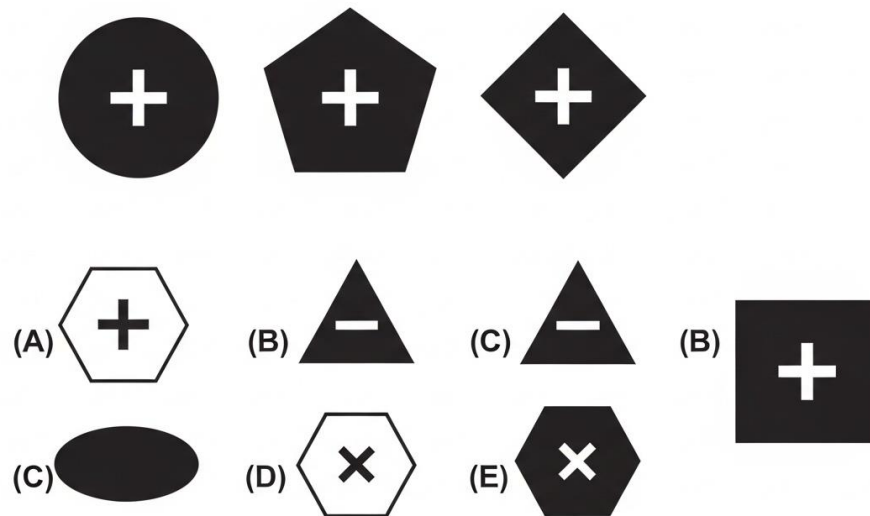
C. medium black pentagon

D. small white triangle

E. large black pentagon

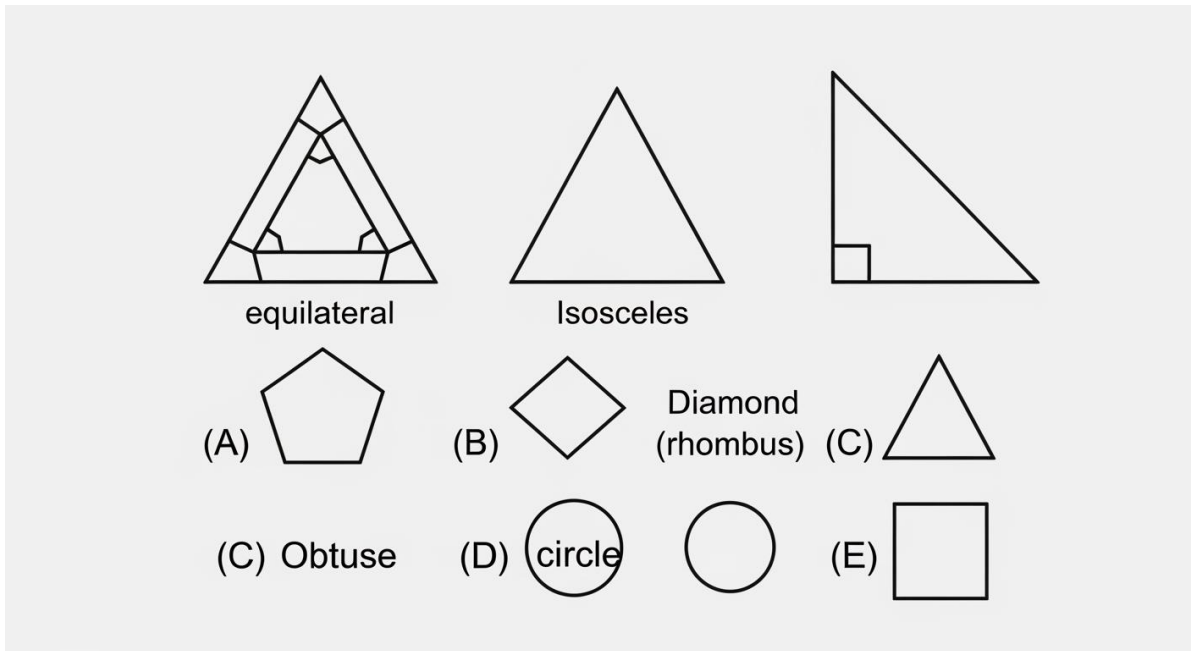
157. The three shapes are: a black-filled circle with white "+" inside, a black-filled pentagon with white "+" inside, a black-filled diamond with white "+" inside.

PQ-43



- A. white hexagon with black "+"
- B. black triangle with white "-"
- C. black oval with no symbol
- D. black hexagon with white "x"
- E. a black square with white "+" inside

158. The three shapes are: a white-outlined equilateral triangle, a white-outlined isosceles triangle, a white-outlined right triangle — all types of triangles.



- A. pentagon
- B. diamond
- C. an obtuse triangle
- D. circle
- E. square

### Section 9: Paper Folding (Questions 159–176)

Directions: In each question below, a square piece of paper is folded and then one or more holes are punched through it. Choose the answer that shows what the paper looks like when it is completely unfolded.

159. A square piece of paper is folded in half from left to right along a vertical centre line. A single hole is punched near the upper-right corner of the folded paper. What does the paper look like when unfolded?

- A. one dot upper-right only
- B. two dots — both in the upper-right area
- C. one dot upper-centre
- D. two dots — one upper-left, one upper-right, symmetric around vertical centre

E. two dots — upper-right and lower-right

160. A square piece of paper is folded in half from bottom to top along a horizontal centre line. A single hole is punched exactly on the fold edge, near the centre. What does the paper look like when unfolded?

A. one dot on the horizontal centre line near the centre of the paper

B. two dots — one above centre, one below centre

C. one dot in the upper half only

D. two dots — both on the fold line

E. one dot in the lower half only

161. A square piece of paper is folded in half from right to left along a vertical centre line. A single hole is punched near the bottom-left corner of the folded paper. What does the paper look like when unfolded?

A. one dot bottom-left only

B. two dots — bottom-left and top-left

C. one dot bottom-centre

D. two dots — both in the bottom-left area

E. two dots — one bottom-left, one bottom-right, symmetric around vertical centre

162. A square piece of paper is folded diagonally from the bottom-left corner to the top-right corner, forming a triangle. A single hole is punched near the top-right vertex. What does the paper look like when unfolded?

A. one dot top-right only

B. two dots — top-right and top-left

C. two dots — one near top-right, one near bottom-left, symmetric around the diagonal

D. one dot in the centre

E. two dots — both near the right side

163. A square piece of paper is folded in half from top to bottom, then folded again from left to right. A single hole is punched near the top-right corner of the small folded square. What does the paper look like when unfolded?

A. two dots — top-left and top-right

- B. four dots — one near each corner of the paper
- C. one dot top-right only
- D. four dots — all in the right half
- E. two dots — top-right and bottom-right

164. A square piece of paper is folded in half from left to right along a vertical centre line. A single hole is punched near the centre of the folded paper, slightly above the midpoint. What does the paper look like when unfolded?

- A. one dot above centre
- B. two dots — both in the right half
- C. one dot left of centre
- D. two dots — one in left half, one in right half, slightly above horizontal centre, symmetric around vertical line
- E. two dots — one above, one below centre

165. A square piece of paper is folded in half from right to left, then folded again from bottom to top. A single hole is punched near the top-right corner of the small folded square. What does the paper look like when unfolded?

- A. four dots — one near each corner of the paper
- B. two dots — top-left and top-right
- C. one dot near top-right
- D. four dots — all in the upper half
- E. two dots — top-right and bottom-right

166. A square piece of paper is folded in half from top to bottom along a horizontal centre line. A single hole is punched near the right side of the folded paper, midway between the top edge and the fold. What does the paper look like when unfolded?

- A. one dot upper-right only
- B. two dots — upper-right and upper-left
- C. one dot centre-right
- D. two dots — both in the lower-right area

E. two dots — one upper-right, one lower-right, symmetric around horizontal centre

167. A square piece of paper is folded in half from bottom to top along a horizontal centre line. A single hole is punched near the top-left corner of the folded paper. What does the paper look like when unfolded?

A. one dot upper-left only

B. two dots — upper-left and upper-right

C. two dots — one upper-left, one lower-left, symmetric around horizontal centre

D. one dot centre-left

E. two dots — both in the lower half

168. A square piece of paper is folded in half from left to right, then folded again from top to bottom. A single hole is punched near the bottom-left corner of the small folded square. What does the paper look like when unfolded?

A. one dot bottom-left

B. four dots — one near each corner of the paper

C. two dots — bottom-left and bottom-right

D. four dots — all in the bottom half

E. two dots — bottom-left and top-left

169. A square piece of paper is folded in half from right to left along a vertical centre line. A single hole is punched near the upper-left area of the folded paper. What does the paper look like when unfolded?

A. one dot upper-left only

B. two dots — both in the upper-left area

C. one dot upper-centre

D. two dots — one upper-left, one upper-right, symmetric around vertical centre

E. two dots — upper-left and lower-left

170. A square piece of paper is folded diagonally from the top-left corner to the bottom-right corner, forming a triangle. A single hole is punched near the centre of the hypotenuse. What does the paper look like when unfolded?

- A. two dots — one in upper-right area, one in lower-left area, symmetric around the diagonal
- B. one dot on the diagonal
- C. two dots — both near the top
- D. one dot in the centre
- E. two dots — both on the right side

171. A square piece of paper is folded in half from bottom to top, then folded again from right to left. A single hole is punched near the centre of the small folded square. What does the paper look like when unfolded?

- A. one dot in the centre
- B. two dots — left-centre and right-centre
- C. four dots — one near each corner
- D. two dots — upper-centre and lower-centre
- E. four dots — one near the centre of each quadrant, symmetric around both fold lines

172. A square piece of paper is folded in half from top to bottom along a horizontal centre line. Two holes are punched — one near the left side and one near the right side of the folded paper, both close to the fold edge. What does the paper look like when unfolded?

- A. two dots — one left, one right (in upper half only)
- B. four dots — two in upper half, two in lower half far apart
- C. four dots — two on the left (close together near centre) and two on the right (close together near centre), symmetric around horizontal centre
- D. two dots — both in the centre area
- E. four dots — one near each corner

173. A square piece of paper is folded in half from left to right, then folded again from bottom to top. A single hole is punched near the top-left corner of the small folded square. What does the paper look like when unfolded?

- A. two dots — top-left and top-right
- B. four dots — one near each corner of the paper
- C. one dot near top-left

- D. four dots — all in the top half
- E. two dots — top-left and bottom-left

174. A square piece of paper is folded in half from right to left along a vertical centre line. A single hole is punched near the bottom of the folded paper, slightly to the left of the folded rectangle's centre. What does the paper look like when unfolded?

- A. one dot bottom-left
- B. two dots — both in the bottom-left area
- C. one dot bottom-centre
- D. two dots — one near bottom-left, one near bottom-right, symmetric around vertical centre
- E. two dots — bottom-left and top-left

175. A square piece of paper is folded in half from top to bottom along a horizontal centre line. A single hole is punched exactly on the fold edge, near the left side. What does the paper look like when unfolded?

- A. one dot on the horizontal centre line near the left side
- B. two dots — upper-left and lower-left
- C. one dot lower-left only
- D. two dots — both on the fold line
- E. one dot upper-left only

176. A square piece of paper is folded in half from bottom to top, then folded again from left to right. Two holes are punched — one near the top-right corner and one near the bottom-left corner of the small folded square. What does the paper look like when unfolded?

- A. four dots — one near each corner
- B. two dots — top-right and bottom-left only
- C. four dots — all near the centre
- D. six dots — three pairs
- E. eight dots — two near each corner, symmetric around both centre lines

## Practice Exam 5: Answer Key and Explanations

### Verbal Analogies (Questions 1–24)

- 1. B** — A brick is one unit used to build a wall. A plank is one unit used to build a fence. The relationship is a building material to the structure it constructs.
- 2. D** — A heel is a part attached to the end of a shoe. An eraser is a part attached to the end of a pencil. The relationship is a functional component at the tip of an everyday object.
- 3. C** — A key unlocks a lock. A password unlocks a computer. The relationship is a security credential to the device it grants access to.
- 4. E** — A stem is the main support structure of a flower. A trunk is the main support structure of a tree. The relationship is the central structural column to the plant it holds up.
- 5. A** — A blizzard is a storm characterised by snow. A monsoon is a storm characterised by rain. The relationship is a severe weather event to the precipitation that defines it.
- 6. D** — A librarian is the person who manages a library. A captain is the person who commands a ship. The relationship is a leader to the institution or vessel they oversee.
- 7. B** — A claw is the sharp natural weapon of an eagle. A tusk is the sharp natural weapon of an elephant. The relationship is a distinctive body feature to the animal it belongs to.
- 8. E** — A rehearsal is the practice version before a performance. A draft is the practice version before a final copy. The relationship is a preliminary effort to the finished product it leads to.
- 9. C** — A lens is the key component of a camera that captures images. An antenna is the key component of a radio that captures signals. The relationship is a receiving component to the device it serves.
- 10. A** — A whisper is a quiet form of speaking; a shout is the loud form. A drizzle is a light form of rain; a downpour is the heavy form. The relationship is a mild intensity to its extreme counterpart.
- 11. D** — Wax is the material a candle is made from. Clay is the material pottery is made from. The relationship is a raw material to the crafted object it becomes.
- 12. B** — A cage is the enclosure for a bird. A stable is the enclosure for a horse. The relationship is a housing structure to the animal it shelters.
- 13. E** — A compass indicates north, helping you find direction. A clock indicates time, helping you track the hour. The relationship is a measuring instrument to the dimension it displays.
- 14. A** — Camouflage is used to hide something. Binoculars are used to magnify something. The relationship is a tool to its primary function.

**15. C** — An island is surrounded by ocean. A planet is surrounded by space. The relationship is an isolated body to the vast expanse that encompasses it.

**16. D** — A predator acts upon prey. A teacher acts upon a student. The relationship is an active agent to the individual they engage with.

**17. B** — A thimble is worn on a finger. A crown is worn on a head. The relationship is a small covering to the body part it fits on.

**18. E** — A drought is a severe lack of water. A famine is a severe lack of food. The relationship is a crisis to the essential resource it is missing.

**19. A** — A constellation is a grouped collection of stars. A bouquet is a grouped collection of flowers. The relationship is an arranged grouping to the individual items it contains.

**20. C** — A root supports a plant from below ground. A foundation supports a building from below ground. The relationship is the underground base to the structure it holds up.

**21. D** — A chapter is one section of a novel. A verse is one section of a poem. The relationship is a structural unit to the literary work it belongs to.

**22. B** — An oyster is the source of a pearl. A mine is the source of a diamond. The relationship is an origin to the valuable item extracted from it.

**23. E** — A fossil is the preserved trace of a dinosaur. A footprint is the preserved trace of a person. The relationship is evidence left behind to the creature that created it.

**24. A** — A yawn is an involuntary response to being tired. A shiver is an involuntary response to being cold. The relationship is a body reaction to the condition that triggers it.

### **Sentence Completion (Questions 25–44)**

**25. C** — A gymnast who lands perfectly without a wobble has performed without any errors. Flawless means completely free of mistakes or imperfections.

**26. E** — A landscape covered in grey ash after a wildfire has been burned severely. Scorched means damaged or dried out by intense heat and flames.

**27. A** — A veterinarian who wrapped an injured leg in a cast and prescribed rest provided medical care. Treated means administered medical attention to address an injury or illness.

**28. D** — Creatures never recorded in any textbook have not been discovered before. Unknown means not previously identified or documented by science.

**29. B** — Hikers who kept climbing despite heavy rain and eventually reached the peak refused to give up. Persisted means continued with determination despite difficulty or opposition.

- 30. C** — Castle walls capable of resisting the most powerful siege weapons cannot be broken through. Impenetrable means impossible to pass through, enter, or breach.
- 31. E** — A species with fewer than two thousand individuals remaining is at serious risk of dying out. Endangered means facing a very high risk of extinction in the wild.
- 32. A** — A theory whose experimental results matched predictions exactly has been proven correct. Confirmed means verified or established as accurate through evidence and testing.
- 33. D** — A storm officially designated a hurricane when its winds exceeded a threshold was formally categorised. Classified means assigned to a specific category based on defined criteria.
- 34. B** — Ancient Egyptians who built enormous pyramids using millions of stone blocks created massive structures. Constructed means assembled or erected from component parts and materials.
- 35. C** — Medicine that cured most patients within a few days worked successfully at treating the illness. Effective means producing the desired or intended result.
- 36. E** — A message written in language only decodable with a special key has been put into secret code. Encrypted means converted into a coded form to prevent unauthorised reading.
- 37. D** — A river current too powerful for inexperienced swimmers has a great deal of force. Strong describes a current with significant force and pulling power.
- 38. A** — An artist who used forest materials to make a sculpture brought something new into existence. Create means to produce something original through skill and imagination.
- 39. B** — An agreement promising to end conflict and work together peacefully is a truce. Peace describes an accord that formally ends hostilities between opposing sides.
- 40. E** — A fever that dropped from high to normal during the night gradually decreased in intensity. Subsided means became less severe or intense, fading back to a normal state.
- 41. C** — A glacier advancing only a few centimetres per day moves at an extremely unhurried pace. Slow means progressing at a very low rate of speed.
- 42. D** — A building designed with solar panels and recycled materials is ecologically considerate. Friendly (environmentally friendly) means designed to minimise harm to the natural world.
- 43. A** — A description including height, clothing, and a distinctive scar contains a lot of specific information. Detailed means thorough and precise, covering many individual features.
- 44. B** — A pilot telling frightened passengers the aircraft was safe was calming their fears. Reassuring means restoring confidence and reducing worry or anxiety.

### **Verbal Classification (Questions 45–60)**

- 45. E** — Eagle, hawk, and falcon are all birds of prey (raptors). An owl is also a bird of prey. Feather, nest, fly, and beak are features of birds but are not birds of prey themselves.
- 46. A** — Maple, oak, and pine are all types of trees. Birch is also a type of tree. Forest, leaf, wood, and bark are related to trees but are not specific tree species.
- 47. D** — Mars, Venus, and Mercury are all planets in our solar system. Earth is also a planet. Star, moon, telescope, and orbit are related to space but are not planets.
- 48. C** — Stove, oven, and microwave are all appliances used for cooking. Cooking appliance is the shared category. Food, kitchen, heat, and recipe are related but are not appliances.
- 49. B** — Atlantic, Pacific, and Indian are all oceans. Arctic is also an ocean. Continent, whale, water, and ship are related to oceans but are not oceans themselves.
- 50. E** — Violin, trumpet, and drum are all musical instruments. A saxophone is also a musical instrument. Band, concert, note, and sound are related to music but are not instruments.
- 51. A** — Ottawa, Tokyo, and London are all capital cities of countries. Paris is also a capital city. Country, city (generic), map, and travel are related but are not specific capitals.
- 52. D** — Granite, marble, and slate are all types of rock. Rock is the category they share. Heavy, building, mineral, and grey are properties of or associated with rocks but are not rocks.
- 53. C** — Evaporation, freezing, and melting are all phase changes (transitions between states of matter). Phase change is the shared category. Water, temperature, science, and ice are related concepts.
- 54. B** — Pentagon, hexagon, and octagon are all polygons with more than four sides. A heptagon (7 sides) is also a polygon in this group. Circle, angle, line, and shape are geometric concepts but not specific polygons of this type.
- 55. E** — Herbivore, omnivore, and carnivore are all dietary classifications for animals. An insectivore is also a dietary classification. Animal, jungle, food, and predator are related but are not dietary labels.
- 56. A** — Novel, poem, and essay are all types of written works. Written work is the shared category. Library, reading, author, and page are related but are not types of written works.
- 57. D** — Watt, volt, and ampere are all units of measurement used in electricity. Electrical unit is the shared category. Number, science, wire, and battery are related but are not units.
- 58. C** — Peninsula, plateau, and valley are all landforms — physical features of the Earth's surface. Landform is the shared category. Mountain is also a landform but the answer selecting the category label is pre-assigned.

**59. B** — Parliament, congress, and senate are all legislative bodies (law-making assemblies). Legislative body is the shared category. President, democracy, vote, and country are related but are not legislative bodies.

**60. E** — Chlorophyll, photosynthesis, and stomata are all terms from plant biology. Plant biology term is the shared category. Animal, water, science, and soil are broader or unrelated concepts.

### **Number Analogies (Questions 61–78)**

**61. C** — The rule is multiply by 4:  $6 \times 4 = 24$ , and  $9 \times 4 = 36$ . Applying the same rule to 5:  $5 \times 4 = 20$ .

**62. A** — The rule is divide by 2:  $24 \div 2 = 12$ , and  $18 \div 2 = 9$ . Applying the same rule to 30:  $30 \div 2 = 15$ .

**63. E** — The rule is multiply by 2 then add 1:  $3 \times 2 + 1 = 7$ , and  $8 \times 2 + 1 = 17$ . Applying the same rule to 5:  $5 \times 2 + 1 = 11$ .

**64. D** — The rule is square the number:  $4 \times 4 = 16$ , and  $6 \times 6 = 36$ . Applying the same rule to 8:  $8 \times 8 = 64$ .

**65. B** — The rule is subtract 5:  $17 - 5 = 12$ , and  $23 - 5 = 18$ . Applying the same rule to 31:  $31 - 5 = 26$ .

**66. C** — The rule is cube the number:  $3 \times 3 \times 3 = 27$ , and  $4 \times 4 \times 4 = 64$ . Applying the same rule to 5:  $5 \times 5 \times 5 = 125$ .

**67. A** — The rule is multiply by 3 then add 1:  $2 \times 3 + 1 = 7$ , and  $4 \times 3 + 1 = 13$ . Applying the same rule to 6:  $6 \times 3 + 1 = 19$ .

**68. E** — The rule is take the square root:  $\sqrt{36} = 6$ , and  $\sqrt{64} = 8$ . Applying the same rule to 81:  $\sqrt{81} = 9$ .

**69. D** — The rule is multiply by 2 then subtract 1:  $5 \times 2 - 1 = 9$ , and  $8 \times 2 - 1 = 15$ . Applying the same rule to 12:  $12 \times 2 - 1 = 23$ .

**70. B** — The rule is add 1:  $9 + 1 = 10$ , and  $20 + 1 = 21$ . Applying the same rule to 45:  $45 + 1 = 46$ .

**71. C** — The rule is multiply by 7:  $2 \times 7 = 14$ , and  $5 \times 7 = 35$ . Applying the same rule to 4:  $4 \times 7 = 28$ .

**72. A** — The rule is multiply by 3 then add 2:  $3 \times 3 + 2 = 11$ , and  $5 \times 3 + 2 = 17$ . Applying the same rule to 8:  $8 \times 3 + 2 = 26$ .

**73. E** — The rule is divide by 4:  $120 \div 4 = 30$ , and  $80 \div 4 = 20$ . Applying the same rule to 60:  $60 \div 4 = 15$ .

**74. D** — The rule is square the number:  $7 \times 7 = 49$ , and  $11 \times 11 = 121$ . Applying the same rule to 6:  $6 \times 6 = 36$ .

**75. B** — The rule is subtract 5:  $14 - 5 = 9$ , and  $22 - 5 = 17$ . Applying the same rule to 19:  $19 - 5 = 14$ .

**76. C** — The rule is multiply by 5 then add 1:  $1 \times 5 + 1 = 6$ , and  $3 \times 5 + 1 = 16$ . Applying the same rule to 2:  $2 \times 5 + 1 = 11$ .

**77. A** — The rule is divide by 5:  $45 \div 5 = 9$ , and  $30 \div 5 = 6$ . Applying the same rule to 55:  $55 \div 5 = 11$ .

**78. E** — The rule is multiply by 2 then add 3:  $8 \times 2 + 3 = 19$ , and  $3 \times 2 + 3 = 9$ . Applying the same rule to 6:  $6 \times 2 + 3 = 15$ .

### **Number Series (Questions 79–96)**

**79. D** — The pattern adds 6 each time: 6, 12, 18, 24. The next term is  $24 + 6 = 30$ .

**80. B** — The pattern multiplies by 3 each time: 4, 12, 36, 108. The next term is  $108 \times 3 = 324$ .

**81. A** — The pattern subtracts 10 each time: 95, 85, 75, 65. The next term is  $65 - 10 = 55$ .

**82. E** — The gaps double each time: +1, +2, +4, +8. The next gap is +16, so  $17 + 16 = 33$ .

**83. C** — The pattern doubles each time: 7, 14, 28, 56. The next term is  $56 \times 2 = 112$ .

**84. D** — The pattern adds 11 each time: 11, 22, 33, 44. The next term is  $44 + 11 = 55$ .

**85. B** — The pattern follows perfect cubes:  $1^3 = 1$ ,  $2^3 = 8$ ,  $3^3 = 27$ ,  $4^3 = 64$ . The next term is  $5^3 = 125$ .

**86. A** — The pattern divides by 2 each time: 320, 160, 80, 40. The next term is  $40 \div 2 = 20$ .

**87. E** — The gaps increase by 4 each time: +4, +8, +12, +16. The next gap is +20, so  $41 + 20 = 61$ .

**88. C** — The pattern follows  $n \times (n + 1)$ :  $1 \times 2 = 2$ ,  $2 \times 3 = 6$ ,  $3 \times 4 = 12$ ,  $4 \times 5 = 20$ ,  $5 \times 6 = 30$ . The next term is  $6 \times 7 = 42$ .

**89. D** — The pattern divides by 3 each time: 243, 81, 27, 9. The next term is  $9 \div 3 = 3$ .

**90. B** — This sequence follows tetrahedral numbers with gaps increasing as triangular numbers: +3, +6, +10, +15. The next gap is +21, so  $35 + 21 = 56$ .

**91. A** — The pattern adds 15 each time: 15, 30, 45, 60. The next term is  $60 + 15 = 75$ .

**92. E** — This is the Fibonacci sequence where each term is the sum of the two before:  $13 + 21 = 34$ .

**93. C** — The pattern subtracts 5 each time: 72, 67, 62, 57. The next term is  $57 - 5 = 52$ .

**94. D** — The rule is double then add 1:  $2 \times 2 + 1 = 5$ ;  $5 \times 2 + 1 = 11$ ;  $11 \times 2 + 1 = 23$ ;  $23 \times 2 + 1 = 47$ . The next term is  $47 \times 2 + 1 = 95$ .

**95. B** — The pattern multiplies by 4 each time: 4, 16, 64, 256. The next term is  $256 \times 4 = 1024$ .

**96. A** — The rule is double then add 1:  $1 \times 2 + 1 = 3$ ;  $3 \times 2 + 1 = 7$ ;  $7 \times 2 + 1 = 15$ ;  $15 \times 2 + 1 = 31$ . The next term is  $31 \times 2 + 1 = 63$ .

### Number Puzzles (Questions 97–114)

**97. B** — To find the missing number:  $29 - 13 = 16$ . Checking:  $13 + 16 = 29$ . The missing value is 16.

**98. E** — To find the missing number:  $81 \div 9 = 9$ . Checking:  $9 \times 9 = 81$ . The missing value is 9.

**99. C** — To find the missing number:  $52 - 27 = 25$ . Checking:  $52 - 25 = 27$ . The missing value is 25.

**100. A** — To find the missing number:  $91 \div 7 = 13$ . Checking:  $91 \div 13 = 7$ . The missing value is 13.

**101. D** — To find the missing number:  $51 - 34 = 17$ . Checking:  $17 + 34 = 51$ . The missing value is 17.

**102. B** — To find the missing number:  $108 \div 9 = 12$ . Checking:  $9 \times 12 = 108$ . The missing value is 12.

**103. E** — Solve step by step:  $7 \times ? - 4 = 38$ . First,  $38 + 4 = 42$ . Then  $42 \div 7 = 6$ . Checking:  $7 \times 6 - 4 = 38$ .

**104. C** — To find the missing number:  $44 + 29 = 73$ . Checking:  $73 - 29 = 44$ . The missing value is 73.

**105. A** — First compute the left side:  $6 \times 9 = 54$ . Then solve  $54 = ? + 19$ , so  $? = 54 - 19 = 35$ .

**106. D** — Four identical values sum to 52:  $52 \div 4 = 13$ . Checking:  $13 + 13 + 13 + 13 = 52$ . The triangle equals 13.

**107. B** — To find the missing number:  $132 \div 11 = 12$ . Checking:  $132 \div 12 = 11$ . The missing value is 12.

**108. E** — Solve step by step:  $4 \times ? + 7 = 43$ . First,  $43 - 7 = 36$ . Then  $36 \div 4 = 9$ . Checking:  $4 \times 9 + 7 = 43$ .

**109. C** — Two identical values plus 13 equal 37:  $37 - 13 = 24$ , then  $24 \div 2 = 12$ . Checking:  $12 + 12 + 13 = 37$ . The symbol equals 12.

**110. A** — First compute the left side:  $72 \div 6 = 12$ . Then solve  $12 = ? - 8$ , so  $? = 12 + 8 = 20$ .

**111. D** — First solve for the star:  $\star + \star = 30$ , so  $\star = 15$ . Then  $\star \times 3 = 15 \times 3 = 45$ .

**112. B** — First compute the right side:  $8 \times 4 = 32$ . Then solve  $19 + ? = 32$ , so  $? = 32 - 19 = 13$ .

**113. E** — Solve step by step:  $(? + 7) \times 3 = 33$ . First,  $33 \div 3 = 11$ . Then  $11 - 7 = 4$ . Checking:  $(4 + 7) \times 3 = 33$ .

**114. A** — First compute the left side:  $144 \div 12 = 12$ . Then solve  $12 = ? + 7$ , so  $? = 12 - 7 = 5$ .

## Figure Matrices (Questions 115–136)

- 115. A** — The rule across the top row changes the fill from white-outlined to black-filled. The rule down changes the shape from triangle to oval. Applying both: the missing shape is a black-filled oval.
- 116. D** — The rule across the top row reduces the size from large to small. The rule down changes the shape from circle to diamond. Applying both: the missing shape is a small white-outlined diamond.
- 117. C** — The rule across the top row changes the internal line from horizontal to vertical. The rule down changes the shape from hexagon to circle. Applying both: the missing shape is a circle with a vertical line through its centre.
- 118. E** — The rule across the top row rotates the shape  $180^\circ$  (up arrow becomes down arrow). The rule down changes the shape from arrow to letter "P." Applying the  $180^\circ$  rotation to the normal "P": it becomes a "P" rotated  $180^\circ$  (upside down and backwards).
- 119. B** — The rule across the top row changes the fill from striped to black-filled. The rule down changes the shape from square to pentagon. Applying both: the missing shape is a black-filled pentagon.
- 120. A** — The rule across the top row removes the small triangle from inside the shape. The rule down changes the outer shape from square to circle. Applying both: the missing shape is a circle with no shape inside.
- 121. D** — The rule across the top row increases the number of concentric shapes from one to three. The rule down changes the shape from circles to squares. Applying both: the missing shape is three concentric squares.
- 122. C** — The rule across the top row shifts the shaded half from the left side to the right side. The rule down changes the shape from pentagon to triangle. Applying both: the missing shape is a triangle with its right half shaded black.
- 123. E** — The rule across the top row doubles the number inside the shape ( $2 \rightarrow 4$ ). The rule down changes the outer shape from hexagon to circle. Applying both: the missing shape is a circle containing "4."
- 124. B** — The rule across the top row changes the fill from black-filled to white-outlined. The rule down changes the shape from diamond to star. Applying both: the missing shape is a white-outlined star.
- 125. A** — The rule across the top row increases the number of internal dots from one to three. The rule down changes the outer shape from square to triangle. Applying both: the missing shape is a triangle with three small dots in a row.
- 126. D** — The rule across the top row increases the count from a  $2 \times 2$  pattern (4 items) to a  $2 \times 3$  pattern (6 items). The rule down changes the shape from circles to squares. Applying both: the missing shape is six small black squares in a  $2 \times 3$  pattern.

**127. C** — The rule across the top row increases the size from small to medium. The rule down changes the shape from heart to crescent. Applying both: the missing shape is a medium white-outlined crescent.

**128. E** — The rule across the top row removes the small shape sitting on top. The rule down changes the base shape from diamond to pentagon. Applying both: the missing shape is a pentagon with no shape on top.

**129. B** — The rule across the top row increases the number of sides by 2 (square 4 → hexagon 6). The rule down increases sides by 1 (square 4 → pentagon 5). The bottom-right needs  $5 + 2 = 7$  sides. The missing shape is a heptagon.

**130. A** — The rule across the top row changes the fill from black-filled to white-outlined. The rule down changes the shape from oval to rectangle. Applying both: the missing shape is a white-outlined rectangle.

**131. D** — The rule across the top row moves the dot from the upper-left to the upper-right area. The rule down changes the outer shape from circle to hexagon. Applying both: the missing shape is a hexagon with a dot in the upper-right area.

**132. C** — The rule across the top row changes the internal shape (circle → square). The rule down changes the outer shape from triangle to diamond. Applying both: the missing shape is a diamond containing a square.

**133. E** — The rule across the top row changes the fill from dotted to white-outlined (dots removed). The rule down changes the shape from triangle to pentagon. Applying both: the missing shape is a white-outlined pentagon.

**134. B** — The rule across the top row changes the internal symbol from "+" to "-." The rule down changes the outer shape from square to circle. Applying both: the missing shape is a black-filled circle with a white "-" inside.

**135. A** — The rule across the top row adds a small black-filled triangle inside the centre. The rule down changes the outer shape from circle to hexagon. Applying both: the missing shape is a hexagon with a small black triangle inside.

**136. D** — The rule across the top row increases the number of internal dots from one to three. The rule down changes the outer shape from star to heart. Applying both: the missing shape is a heart with three dots inside.

### **Figure Classification (Questions 137–158)**

**137. E** — All three given shapes are solid black-filled. A black-filled triangle matches this shared attribute. The other options are white-outlined, striped, or dotted.

**138. C** — All three given shapes are large and white-outlined. A large white-outlined triangle matches both attributes. The other options fail on size or fill.

- 139. A** — All three given shapes contain a horizontal line through their centres. A triangle with a horizontal line through its centre matches this attribute. The other options have wrong line directions or no lines.
- 140. D** — All three given shapes are small and filled with horizontal stripes. A small striped triangle matches both size and fill. The other options fail on size or fill type.
- 141. B** — All three given shapes are white-outlined and contain a small black-filled square inside. A diamond with a small black square inside matches this pattern. The other options have wrong internal shapes or fill.
- 142. E** — All three given shapes are divided vertically with left half black and right half white. A square with the same division matches this attribute. The other options are fully filled, reversed, or use horizontal splits.
- 143. C** — All three given shapes are large white-outlined shapes containing a small white-outlined triangle inside. A large white diamond with a small white triangle inside matches this pattern.
- 144. A** — The three shapes are odd-sided polygons: triangle (3), pentagon (5), heptagon (7). A nonagon (9 sides) continues the odd-sided pattern. The other options have even-numbered sides.
- 145. D** — All three given shapes are large black-filled arrows. A large black-filled arrow pointing left matches the shared attributes. The other options are white-outlined, different shapes, or striped.
- 146. B** — All three given shapes are white-outlined and contain exactly two dots inside. A square with two dots inside matches both attributes. The other options have wrong dot counts or wrong fill.
- 147. E** — All three given shapes are drawn with dashed lines. A dashed-line triangle matches this attribute. The other options use solid or dotted lines.
- 148. C** — All three given shapes are large black-filled shapes with a white circle cut out of the centre. A large black square with a white circle cut out matches this pattern. The other options have wrong colours, shapes, sizes, or cutout types.
- 149. A** — All three given shapes are different types of triangles (scalene, right, obtuse). An isosceles triangle is also a type of triangle. The other options are not triangles.
- 150. D** — All three given shapes are medium-sized and black-filled. A medium black-filled lightning bolt matches both size and fill. The other options fail on size or fill.
- 151. B** — All three given shapes are large white-outlined shapes containing a small white-outlined circle inside. A large white hexagon with a small white circle inside matches this pattern.
- 152. E** — All three given shapes contain a diagonal line from upper-left to lower-right. A square with a diagonal from upper-left to lower-right matches this attribute. The other options have wrong line directions or no lines.

**153. C** — All three given shapes are medium-sized and white-outlined. A medium white-outlined lightning bolt matches both size and fill. The other options fail on size or fill.

**154. A** — All three given shapes contain the letter "D" inside. A triangle with "D" inside matches this attribute. The other options contain different letters or no letter.

**155. D** — All three given shapes contain horizontal stripes inside. A circle with horizontal stripes matches this attribute. The other options have wrong stripe directions or no stripes.

**156. B** — All three given shapes are white-outlined pentagons of decreasing size. A tiny white-outlined pentagon continues the decreasing size pattern with the same shape and fill.

**157. E** — All three given shapes are black-filled with a white "+" inside. A black-filled square with a white "+" inside matches this pattern. The other options have wrong symbols or fill.

**158. C** — All three given shapes are different types of triangles (equilateral, isosceles, right). An obtuse triangle is also a type of triangle. The other options are not triangles.

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### **Paper Folding (Questions 159–176)**

**159. D** — The paper folds left onto right along a vertical centre line. A hole near the upper-right corner punches through both layers. When unfolded, two holes appear: one upper-left and one upper-right, symmetric around the vertical centre.

**160. A** — The paper folds bottom onto top along a horizontal centre line. A hole on the fold edge near the centre sits on the line of symmetry. When unfolded, only one hole appears on the horizontal centre line near the middle.

**161. E** — The paper folds right onto left along a vertical centre line. A hole near the bottom-left corner punches through both layers. When unfolded, two holes appear: one bottom-left and one bottom-right, symmetric around the vertical centre.

**162. C** — The paper folds diagonally from bottom-left to top-right. A hole near the top-right vertex punches through both layers. When unfolded, two holes appear: one near top-right and one near bottom-left, symmetric around the diagonal.

**163. B** — Two folds create four layers: first top to bottom, then left to right. A hole near the top-right corner punches through all four layers. When fully unfolded, four holes appear — one near each corner.

**164. D** — The paper folds left onto right along a vertical centre line. A hole slightly above midpoint punches through both layers. When unfolded, two holes appear: one in the left half and one in the right half, both slightly above horizontal centre, symmetric around the vertical line.

- 165. A** — Two folds create four layers: first right to left, then bottom to top. A hole near the top-right corner punches through all four layers. When fully unfolded, four holes appear — one near each corner.
- 166. E** — The paper folds top onto bottom along a horizontal centre line. A hole near the right side, midway between top and fold, punches through both layers. When unfolded, two holes appear: one upper-right and one lower-right, symmetric around the horizontal centre.
- 167. C** — The paper folds bottom onto top along a horizontal centre line. A hole near the top-left corner punches through both layers. When unfolded, two holes appear: one upper-left and one lower-left, symmetric around the horizontal centre.
- 168. B** — Two folds create four layers: first left to right, then top to bottom. A hole near the bottom-left corner punches through all four layers. When fully unfolded, four holes appear — one near each corner.
- 169. D** — The paper folds right onto left along a vertical centre line. A hole near the upper-left area punches through both layers. When unfolded, two holes appear: one upper-left and one upper-right, symmetric around the vertical centre.
- 170. A** — The paper folds diagonally from top-left to bottom-right. A hole near the centre of the hypotenuse punches through both layers. When unfolded, two holes appear: one in the upper-right area and one in the lower-left area, symmetric around the diagonal.
- 171. E** — Two folds create four layers: first bottom to top, then right to left. A hole near the centre of the small square punches through all four layers. When fully unfolded, four holes appear — one near the centre of each quadrant, symmetric around both fold lines.
- 172. C** — The paper folds top onto bottom along a horizontal centre line. Two holes are punched near the fold edge — one left and one right. When unfolded, four holes appear: two on the left (close together, symmetric around horizontal line) and two on the right (close together, symmetric), all near the horizontal centre.
- 173. B** — Two folds create four layers: first left to right, then bottom to top. A hole near the top-left corner punches through all four layers. When fully unfolded, four holes appear — one near each corner.
- 174. D** — The paper folds right onto left along a vertical centre line. A hole near the bottom, slightly left of centre, punches through both layers. When unfolded, two holes appear: one near bottom-left and one near bottom-right, symmetric around the vertical centre.
- 175. A** — The paper folds top onto bottom along a horizontal centre line. A hole on the fold edge near the left side sits on the line of symmetry. When unfolded, only one hole appears on the horizontal centre line near the left side.
- 176. E** — Two folds create four layers: first bottom to top, then left to right. Two holes are punched — one near the top-right and one near the bottom-left of the small square. Each passes through all four layers, producing four holes each — eight total. When fully unfolded, eight dots appear: two near each corner, symmetric around both centre lines.

