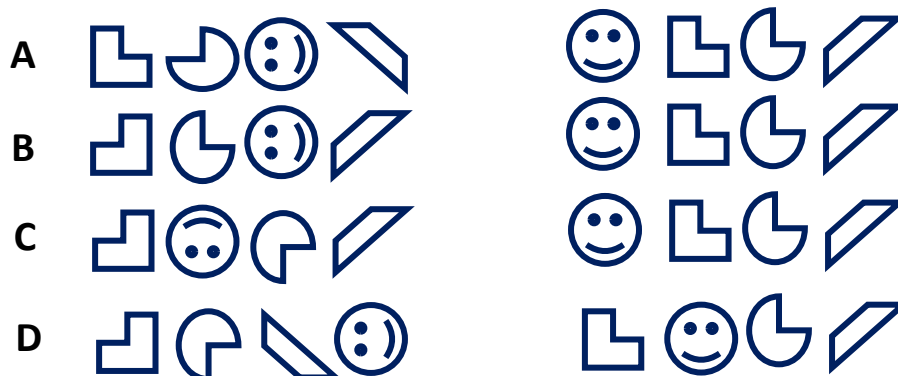**SAMPLE QUESTIONS**

1. In A pair of images below the left-hand image generated from a series of transformations applied to the right-hand image. These changes include change in the order of the shapes, mirror image to one of the shapes and rotation to the one of the shapes.

Which of the following pairs of images shows the same series of changes applied to the left-hand image to produce the right-hand image?

A

B

C

D

2. What number should replace the question mark?

9	3	2	7
6	4	2	4
5	7	3	5
8	8	6	?

3. Jane, Jinny, Joseph, Jake and John participated in a school 200m race. The top five students to cross the finish lines had their times noted.

Jinny reached the line earlier than Joseph.
Joseph had a higher score than Jake.
Jake was ranked forth.
Jake came earlier than John.

If all the statements above are true only one of the sentences bellow CANNOT be true .
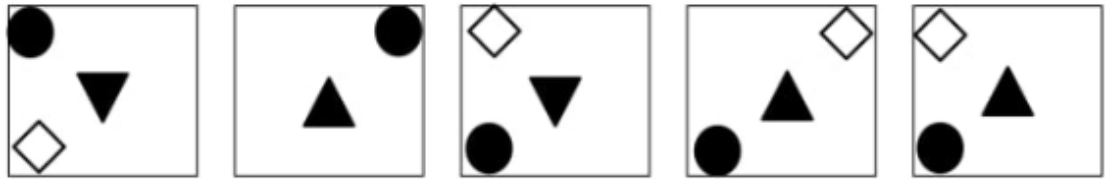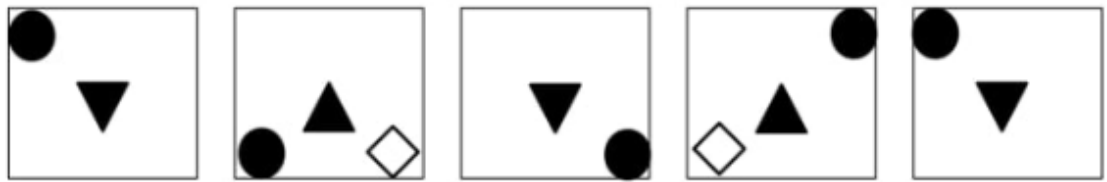Which one is it?

A. Jane has a higher ranking than Joseph
B. Jane has a higher ranking than Jinny
C. Joseph has a higher ranking than Jane
D. Jinny has a lower ranking than Jake

4. The numbers in each of the three boxes follow the same rule. What is the missing number?

37, 120, 23	15, 60, 15	14, 48, ?

A. 12
B. 10
C. 20
D. 15

5. Susan walked around an oval while Penny ran. They started and finished at the same time. They started on the same spot and went in the same direction, keeping up a constant speed for 1hr. Susan walked 8 laps and Penny ran 24 laps in the hour.
   ➤ How many times did Penny passed Susan.
   ➤ How many times did Penny Pass Susan exactly on the same spot where they started.
   ➤ At the beginning of which laps did Penny pass Susan exactly on the spot where they started?

6. Sarah has 4 red marbles, 5 blue marbles, and 3 green marbles in a bag. She randomly selects one marble without looking. What is the probability that she selects a blue marble?

7. If 3 pens and 2 pencils cost $8, and 4 pens and 3 pencils cost $11, what is the cost of 1 pen and 1 pencil?

8. A company has 500 employees. If 30% of the employees are managers and 20% of the remaining employees are supervisors, how many employees are supervisors?

9. A store is offering a discount of 25% on all products. If a shirt is initially priced at $80, what is the discounted price?

10. A garden is 18 meters long and 12 meters wide. What is the area of the garden in square meters?

11. Which of the boxes comes next in the sequence

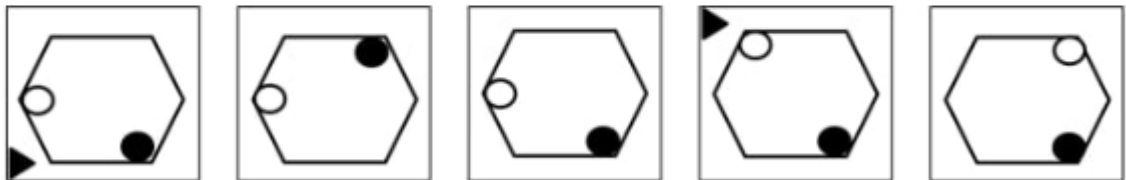

A   B   C   D   E
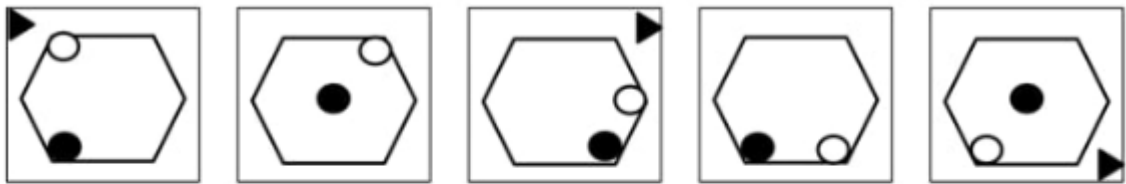
12. Which of the boxes comes next in the sequence

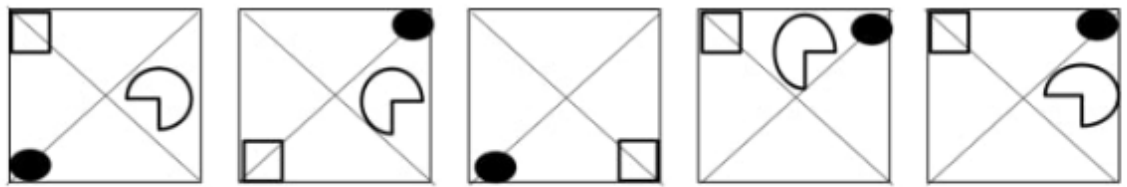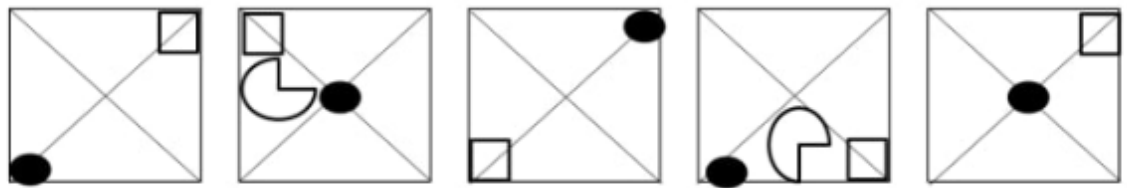A   B   C   D   E

13. Which of the boxes comes next in the sequence
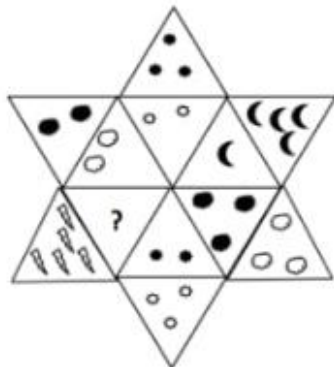

A   B   C   D   E

14. In the grid below, one box is missing. You must work out what rules are being applied in the other boxes in order to work out which of boxes A to F will complete the grid.

15. In a large store with 556 employees approximately 56% are female. Of the female employees, approximately 62% are aged between 48 and 60. How many employees are female and aged between 48 and 60?

A: 225   B: 210   C: 345   D: 193   E: 312

SAMPLE ANSWERS

Question 1:

Answer : B

1st shape moved to 3rd position and rotate 90 degrees anticlockwise

2nd shape moved to 1st position mirror image

3rd shape moved to 2nd position no rotation or mirror image

4th shape no change

Question 2:

Answer : 4

Multiply the first number with the second number to determine the third and fourth number.
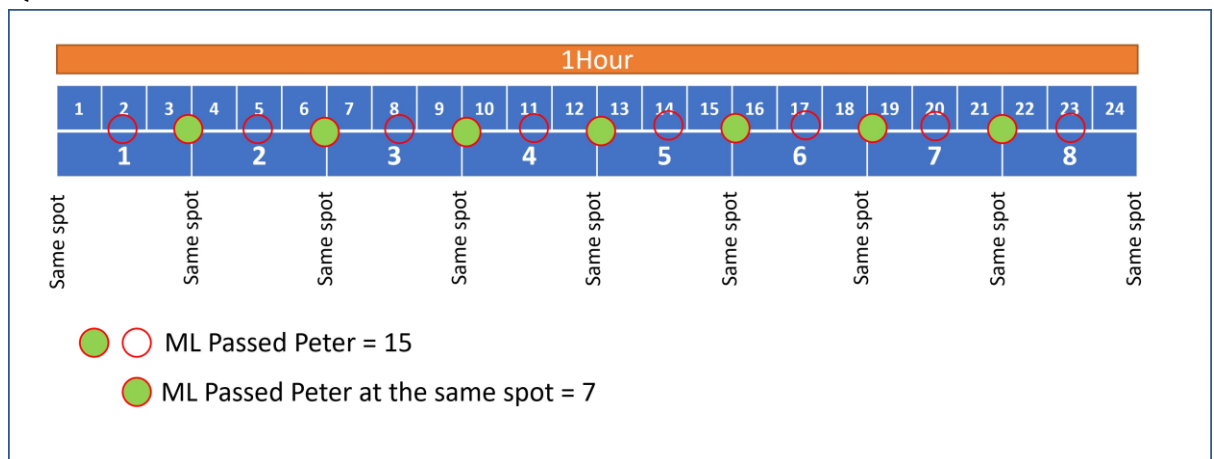
Question 3:

Answer D. Jane was not mentioned … so Jane can be 1,2,3 but not 3 or 5th

Ranking 1st to 5th		
JANE	Jinny	Jinny
Jinny	JANE	Joseph
Joseph	Joseph	JANE
Jake	Jake	Jake
John	John	John

Question 4:

Answer B: 2nd number divided by 2 minus first number.

Question 5:

Question 6:

Answer: To find the probability, we need to calculate the ratio of favorable outcomes (blue marbles) to total outcomes (all marbles). The total number of marbles is 4 + 5 + 3 = 12. The number of favorable outcomes (blue marbles) is 5. Therefore, the probability of selecting a blue marble is 5/12.

Question 7:

Answer:

Let's assume the cost of 1 pen is P and the cost of 1 pencil is Q.

From the given information, we can create two equations:

3P + 2Q = 8 (Equation 1)

4P + 3Q = 11 (Equation 2)

We can solve this system of equations to find the values of P and Q.

Multiplying Equation 1 by 3 and Equation 2 by 2, we get:

9P + 6Q = 24 (Equation 3)

8P + 6Q = 22 (Equation 4)

Subtracting Equation 4 from Equation 3, we eliminate Q:

9P + 6Q - (8P + 6Q) = 24 - 22

P = 2

Substituting the value of P back into Equation 1, we can find Q:

3P + 2Q = 8

3(2) + 2Q = 8

6 + 2Q = 8

2Q = 8 - 6

Q = 1

Therefore, the cost of 1 pen and 1 pencil is $2 + $1 = $3.

Question 8:

Answer:

Step 1: Calculate the number of managers.

Number of managers = 30% of 500 = (30/100) * 500 = 150

Step 2: Calculate the number of non-manager employees.

Number of non-manager employees = Total employees - Number of managers

Number of non-manager employees = 500 - 150 = 350

Step 3: Calculate the number of supervisors.

Number of supervisors = 20% of non-manager employees

Number of supervisors = (20/100) * 350 = 70

Therefore, there are 70 employees who are supervisors.

Question 9:

Answer:

Step 1: Calculate the discount amount.

Discount amount = 25% of $80 = (25/100) * $80 = $20

Step 2: Calculate the discounted price.

Discounted price = Original price - Discount amount

Discounted price = $80 - $20 = $60

Therefore, the discounted price of the shirt is $60.

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Question 10:
Answer:
Area of a rectangle = Length × Width
Area of the garden = 18 meters × 12 meters = 216 square meters

Therefore, the area of the garden is 216 square meters.

Question 11:
Answer : E
Triangle changes direction (from pointing down, to pointing up) with each turn. Circle moves in an anti-clockwise direction around frame corners with each turn. Diamond moves in a clockwise direction around the frame corners with each alternate turn.

Question 12:
Answer C
Unshaded circle moves around hexagon in a clockwise direction with each turn. 2. Shaded circle moves from bottom left hexagon corner, to middle of hexagon, to bottom right hexagon corner with each turn. 3. Triangle moves around frame in a clockwise direction with each alternate turn.

Question 13:
Answer E
Circle dot moves on the diagonal linear line from the bottom left, to the middle intersection, to the top right corner with each turn. Three-quarter circle rotates by 90 degrees in each alternate frame, moving around the triangular segments in an anti-clockwise direction. Square moves around frame in an anti-clockwise direction with each turn.

Question 14:
Answer: D
Within the pattern every shape must appear 5 times. There are 5 black stars, 5 white clouds, 5 black clouds, 5 suns and 5 moons. Adding any other shapes will ruin this balance so the correct answer is D which has 0 new shapes.

Question 15:
Answer: D
Step 1 :
556 X56/100 = 311.36 Females
Step 2:
311.36 x 62/100 = 192.82 Females