Visagio Talent Internship Program
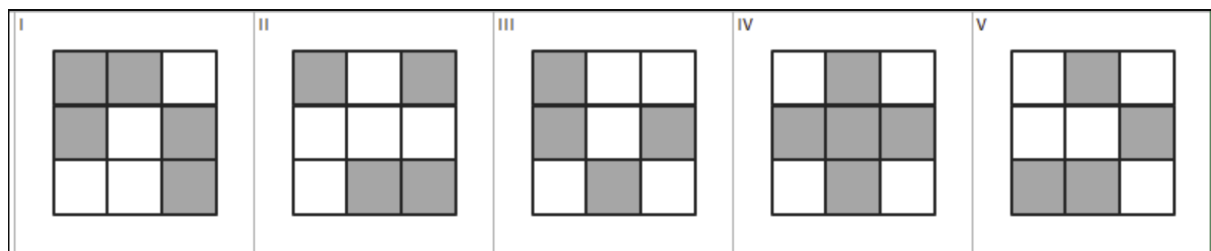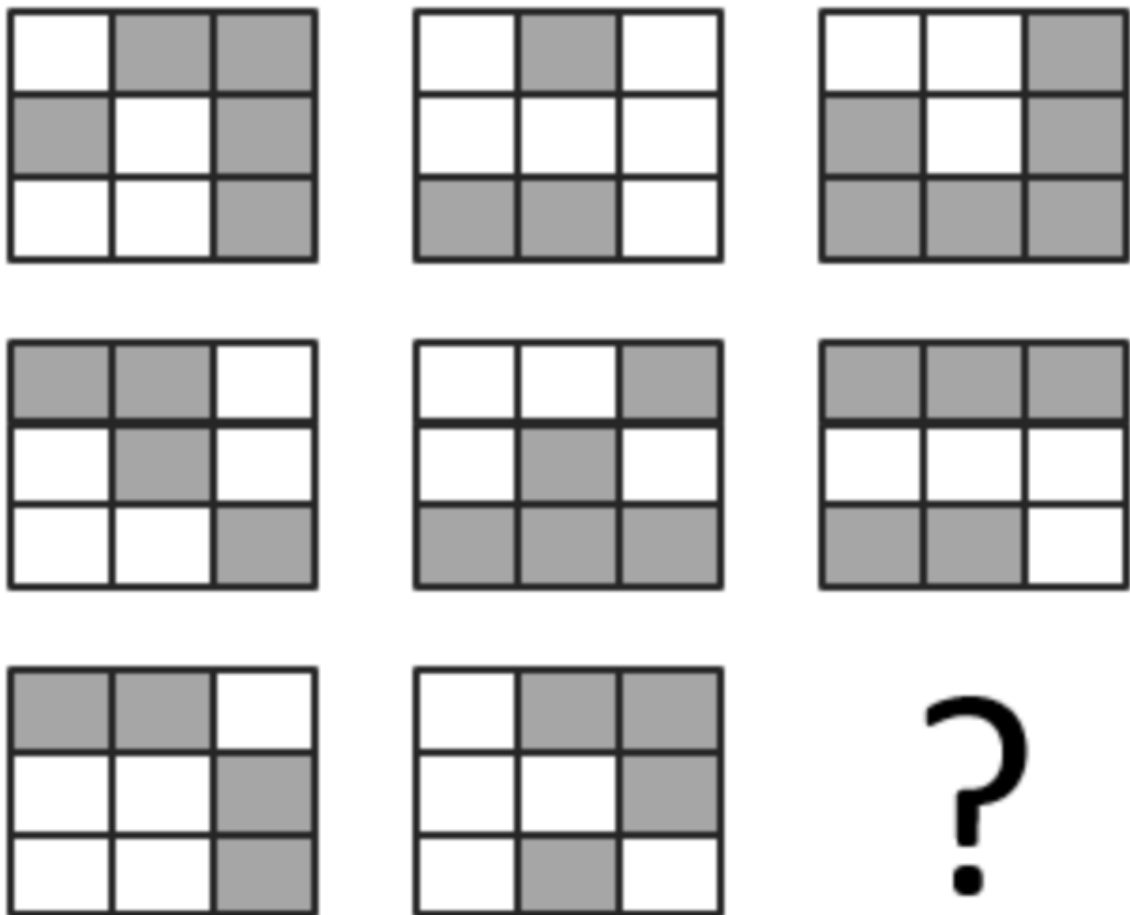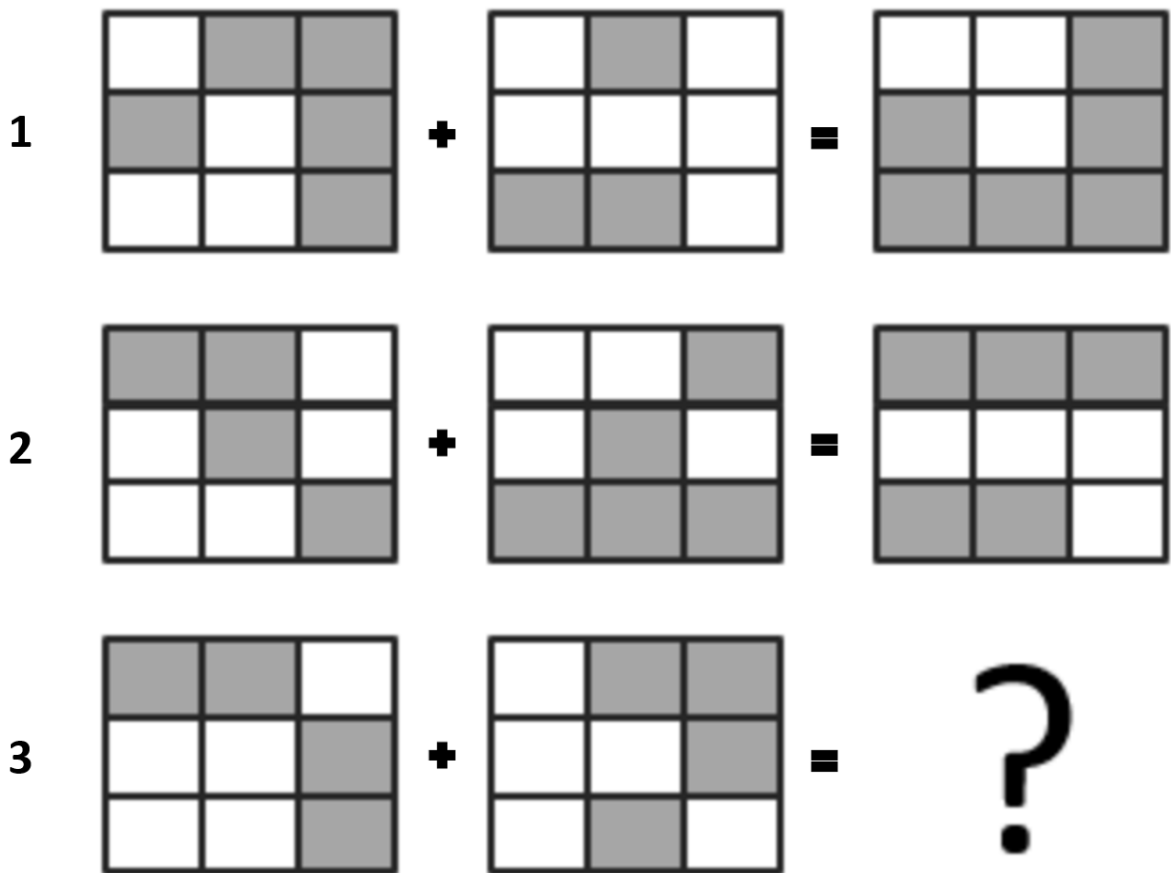
1- LOGIC & PATTERN QUESTION

In the following sequence, which of the shapes best fits in the missing tile?
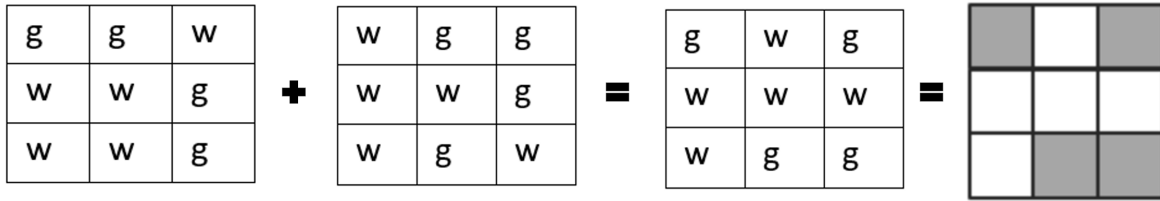
A: OPTION 2

SOLUTION

It is important to recognise which direction the pattern is being formed. In this question, the pattern is formed in rows.

When the first and second shapes of each row are overlayed, white tile + white tile becomes white tile. In the same manner, grey + grey = white grey + white = grey.

With that logic,

g	g	w
w	w	g
w	w	g

+

w	g	g
w	w	g
w	g	w

=

g	w	g
w	w	w
w	g	g

=

Therefore, the answer is option 2.

2- DATA SUFFICIENCY QUESTION

When 200 gallons of oil were removed from a tank, the volume of oil left in the tank was 3/7 of the tank's capacity. What was the tank's capacity?

(1) Before the 200 gallons were removed, the volume of oil in the tank was 1/2 of the tank's capacity.

(2) After the 200 gallons were removed, the volume of the oil left in the tank was 1,600 gallons less than the tank's capacity.

1. ☐ Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.

2. ☐ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.

3. ☐ Both statements together are sufficient, but neither statement alone is sufficient.

4. ☐ Each statement alone is sufficient.

5. ☐ Statements (1) and (2) together are not sufficient.

A: 4

SOLUTION

Check data sufficiency with statement 1 alone:

Let x = capacity of the tank.
Before 200 gallons were removed, volume of oil = (½)x
After 200 gallons were removed, volume of oil = (3/7)x
(1/2)x – 200 = (3/7)x
(1/2)x – (3/7)x = 200
(1/14)x = 200
x = 200 * 14 = 2800 gallons
Statement 1 alone is sufficient to find out the capacity of the tank.

Check data sufficiency with statement 2 alone:

Let x = capacity of the tank.
After 200 gallons were removed, x – 1600 or (3/7)x
x – 1600 = (3/7)x
(4/7)x = 1600
x = 2800 gallons
Statement 2 alone is sufficient to find out the capacity of the tank.

In conclusion, statements 1 and statement 2 are both individually sufficient to find out the capacity of the tank. Therefore, the answer is **4.**

3- BUSINESS CASE QUESTION

Despite the growth in recent years, the Divino Legume Industry hired Visagio to identify new opportunities, proposing actions and improvements for different areas of the company. At the final meeting in February the following KPIs for the production area were presented in the table below. Note, higher scores in the Final Result column indicate better performance.

KPIs		Weight	Monthly				Final Result
			Minimum (1)	Target (7)	Super Target (10)	Actual	Score (1 to 10)
Profitability	Production (ton)	25%	7,000	7,900	8,500	8,100	8
	Productivity (ton/h) [1]	10%	10.00	13.50	14.50	12.00	4.4
	Yield (%) [2]	20%	44%	55%	56%	54%	6.5
	Production downtime (h)	20%	75.00	50.00	35.00	30.00	10
Cash	Retention (%) [3]	10%	6.0%	2.0%	0.0%	1.0%	8.5
Longevity	Customers | Customer Service Complaints (-) [4]	10%	10.00	5.00	3.50	7.00	4.6
	People | Workplace Quality Index (-)	5%	59.00	90.80	92.00	91.00	7.5

(1) Productivity (ton / h): factory productivity in tons of product manufactured per hour worked.

(2) Yield (%): it is the resulting index between what enters and what leaves a productive process.

(3) Retention (%): Ratio between tons of product retained for different reasons and tons of product manufactured.

(4) Customers | Customer Services Complaints: Number of complaints per million kg of products sold.

At the closing meeting, all indicators of the areas are analysed to establish action plans for the following month. From this, which of the following statements are correct:

I. For March, action plans aimed at improving productivity are a priority compared to the unavailability of the production line;

II. The total production should be prioritized given the weight when compared to the others;

III. The action plans carried out in February related to the unavailability of the line must be analysed in order to maintain performance in the following month;

IV. Despite a low score in productivity, the overall production had a higher score because of minimal downtime.

V. The Customer indicator | Customer Services Complaints was the worst result in relation to the target;

1. ☐ I, II and V

2. ☐ II, IV and V

3. ☐ I, III and IV

4. ☐ II, III and IV

5. ☐ I, II and III

A: 3

SOLUTION

Analyse each statement starting from (I)

(I) For March, action plans aimed at improving productivity are a priority compared to the unavailability of the production line

The unavailability of the production line is determined by the production downtime. When production downtime is higher, the production line has higher unavailability. For February, the production downtime performed better than the *Super Target* and had *Final Result* of 10/10. In contrast, productivity was the worst performing metric of all KPIs with *Final Result* of 4.4/10. Therefore, it would be correct to say that improving productivity of the production line is a priority compared to the unavailability.

After deeming (I) as a correct statement, we can eliminate options 2 & 4.

(II) The total production should be prioritized given the weight when compared to the others

It is true that the total production has the highest individual weight of all KPIs. But the total production *Final Result* in February was still good (8/10). *Divino Legume* should focus on areas where it has been performing poorly such as Productivity & Customer Service. Therefore, this statement would be incorrect.

We can already eliminate options 1 & 5, which would only leave option 3 to be the right answer. But for the purpose of this solution, let's check all other statements.

(III) The action plans carried out in February related to the unavailability of the line must be analysed in order to maintain performance in the following month

Production downtime (unavailability) performance was extremely high for the month of February. *Divino Legume* should reflect back on what enabled them to achieve this result and try to continue this trend.

(IV) Despite a low score in productivity, the overall production had a higher score because of minimal downtime.

Overall production = Productivity x Time in Production.

In February, *Divino Legume* had high production time which equated to high overall production.

Therefore, statement IV is correct.

(V) The Customer indicator | Customer Services Complaints was the worst result in relation to the target

Looking at the *Final Result* column, Productivity (4.4) had the lowest score of all KPIs. Therefore, statement V is incorrect.