

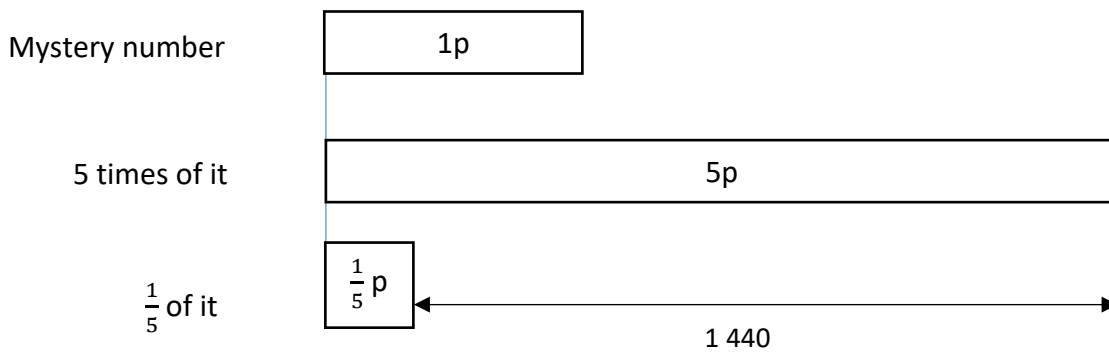
DOKA Paper R (for Year Level 5-6)

Sample Questions

(Part A - Basic Reasoning)

If 5 times of a mystery number is 1440 more than $\frac{1}{5}$ of the same mystery number, what is the mystery number?

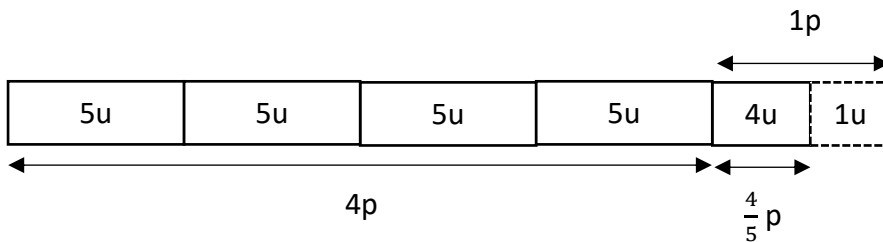
Solution:



From diagram,

$$5p - \frac{1}{5}p = 4\frac{4}{5}p$$

Let $1p = 5$ smaller units



Therefore, $5u + 5u + 5u + 5u + 4u = 1\ 440$

$$24u = 1\ 440$$

$$1u = 1\ 440 \div 24$$

$$= 60$$

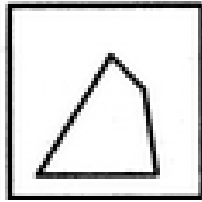
Mystery number = $1p$

$$= 5u$$

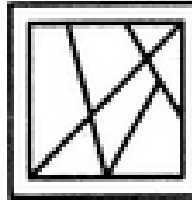
$$= 5 \times 60 = \mathbf{300}$$

(Part B - Intermediate Reasoning: NVR)

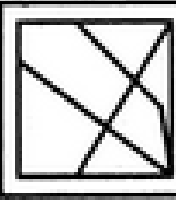
Which of the following figures A, B, C and D, can the Pattern P be seen?



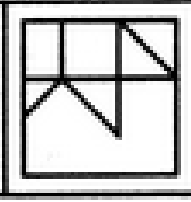
P



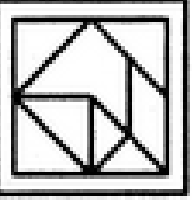
A



B



C

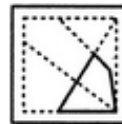


D

Solution:

Check left sloped line: Only appears in A & B

Check right sloped line: Appears only in **B**



(Part C - Advanced Reasoning)

Four students each has a certain number of stamps. Abby and Benjamin have 420 in total, Benjamin and Christopher have 480 in total, Christopher and Danny have 540 in total. Given that four of them have an average of 240 stamps. Find the total number of stamps that Abby and Danny have altogether.

Solution:

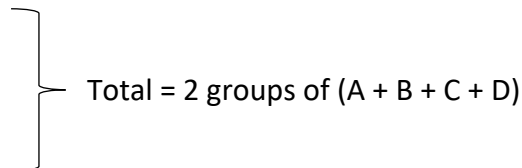
By using grouping,

$$A + B = 420$$

$$B + C = 480$$

$$C + D = 540$$

$$A + D = \square$$



Total = 2 groups of (A + B + C + D)

Since average for each student is 240 stamps, therefore

$$1 \text{ group of } (A + B + C + D) = 240 \times 4$$

$$2 \text{ groups of } (A + B + C + D) = 2 \times (240 \times 4) \\ = 1\,920$$

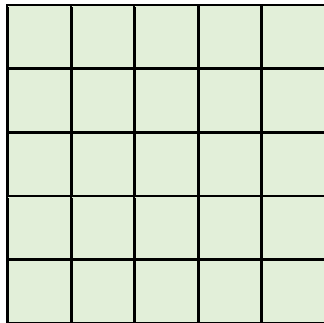
$$420 + 480 + 540 + \square = 1\,920$$

$$1\,440 + \square = 1\,920$$

$$\square = 480$$

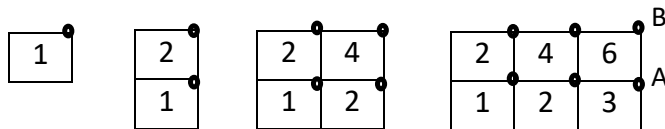
(Part D - Extended Reasoning)

How many rectangles are there in this figure that is formed by 25 squares?



Solution:

Every rectangle (regardless of size or formed by how many squares) has a **top-right corner**.



For example: 3 rectangles have dot A as their top-right corner.

6 rectangles have dot B as their top-right corner.

We see a Moving pattern. We can use visual reasoning by drawing some simplified figures. Therefore, by referring to this pattern, we write down these numbers near the corners:

5	10	15	20	25
4	8	12	16	20
3	6	9	12	15
2	4	6	8	10
1	2	3	4	5

Add them together, there are **225** rectangles.