



---

## Solutions

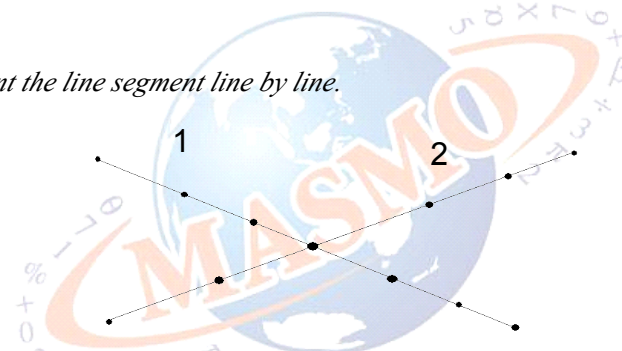
1 **Method 1:** Find the multiples of  $x$  and  $y$ .

Since the number is divisible by 3 and 7, it is also divisible by 21. Check that the multiples of 21 which are 21, 42, 63, 84, 105, 126 and so on. Find the smallest of these multiples which satisfies the conditions. Notice that 126 have remainder 1 when divided by 5 and 5 when divided by 11. **Hence, the smallest number that satisfies the conditions is 126.**



## Solutions

**2** **Method:** *Count the line segment line by line.*



Line 1 has 7 endpoints, contributing to  $1 + 2 + 3 + 4 + 5 + 6 = 21$  line segments. Line 2 has 6 endpoints, contributing to  $1 + 2 + 3 + 4 + 5 = 15$  line segments. **In total, there are  $21 + 15 = 36$  line segments.**



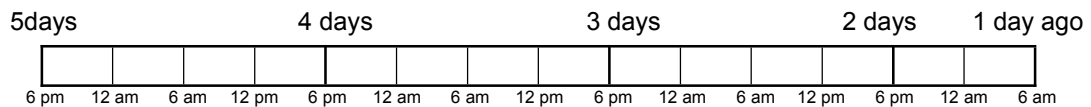


## Solutions

**3** **Method 1:** Find the total hours during the period.

First we calculate how many times he took the pills during the period. From 5 days ago 6pm to yesterday 6am, there are  $24 \times 3 + 12 = 84$  hours.  $84 \div 6 = 14$ . He took the pills 14 times. This does not include the last 2 pills that he took at yesterday 6am, so we add 2 pills back. **Hence, the doctor prescribed  $14 \times 2 + 2 = 30$  pills.**

**Method 2:** Draw the time table.



**$15 \text{ times} \times 2 = 30 \text{ pills}$**



---

## Solutions

**4** **Method:** Calculate the total time and total distance.

In the first 20km, the time consumed was  $20 \text{ km} \div 60 \text{ km/h} = \frac{1}{3}$  hour =

20 minutes.

Total time consumed was  $20 + 20 + 20 = 60$  minutes = 1 hour.

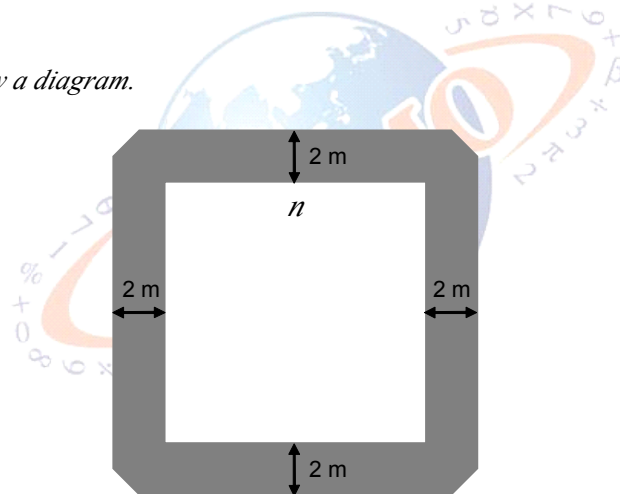
Total distance was  $20 + 40 = 60$  km.

**Hence, the average speed was  $60 \text{ km} \div 1 \text{ hour} = 60 \text{ km/h}$ .**



**Solutions**

5 **Method:** Draw a diagram.



The area of the inner square is 36. Then,

$$n \times n = 36 \rightarrow n = 6$$

The area of the outer square is  $(n + 4) \times (n + 4) = (6 + 4) \times (6 + 4) = 100$  square meters.

**Then the area of the concrete path is  $100 - 36 = 64$  square meters.**