PRACTICE – II

Ques 1) In the following alphametic, all the different letters stand for different digits. Find the 5-digit number **OGAMS**.

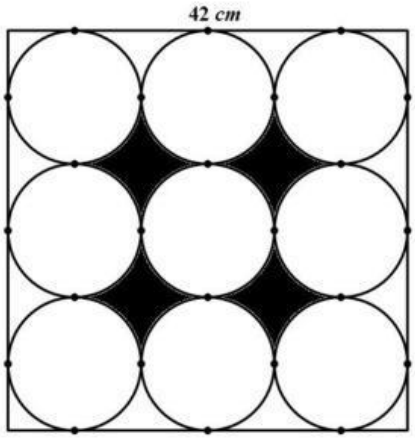
$$\begin{array}{cccccc} & S & A & S & M & O \\ \times & & & & & 4 \\ \hline & O & G & A & M & S \end{array}$$

Ques 2) Find the following sum

$$\frac{1}{1\times 6}+\frac{1}{6\times 11}+\frac{1}{11\times 16}+\frac{1}{16\times 21}+\cdots+\frac{1}{2006\times 2011}+\frac{1}{2011\times 2016}$$

Ques 3) A car took 3 hours and 41 minutes to travel from Town A to Town B and travel back from Town B to Town A. The car travelled downhill at 6 km/h (kilometres per hour), on level at 5 km/h, and uphill at only 4 km/h. The road from Town A to Town B is on level for 4 km. Find the distance between the two towns.

Ques 4) Nine identical circles are inscribed in the square as shown in the diagram. Find the area of the shaded region. (Area of circle $= \pi r^2$, take $\pi = \frac{22}{7}$)



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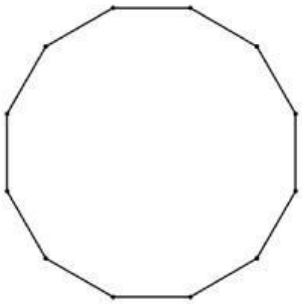
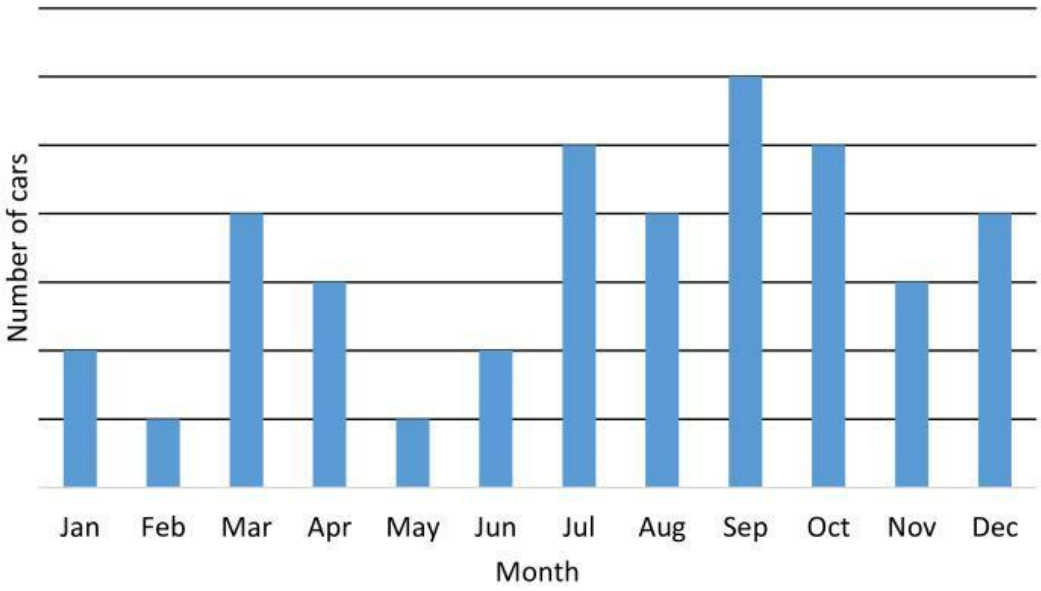
Ques 5) The figure below shows a 12-sided regular polygon, which is called **DODECAGON**. How many diagonals can be drawn in it?



Ques 6) How many different 4-digit numbers can be formed using the digits 0, 2, 7, 8 and 9 such that no digits repeat and the resulting number is divisible by four?

Ques 7) The bar chart below shows the number of cars sold in Town A in 2015. All the horizontal lines are equally spaced. The average number of cars sold in each month is 20 cars. How many more cars were sold in the second half of the year compared to the first half of the year?



Ques 8) Amy had 45 fewer marbles than Cheryl. $\frac{5}{9}$ of Amy's marbles and $\frac{2}{3}$ of Cheryl's marbles were given away. The remaining number of marbles that Cheryl has, is twice the number of Amy's remaining marbles. How many marbles did Cheryl have at first?

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Ques 9) Find the pattern and solve for x.

$$211 \leftrightarrow 6$$

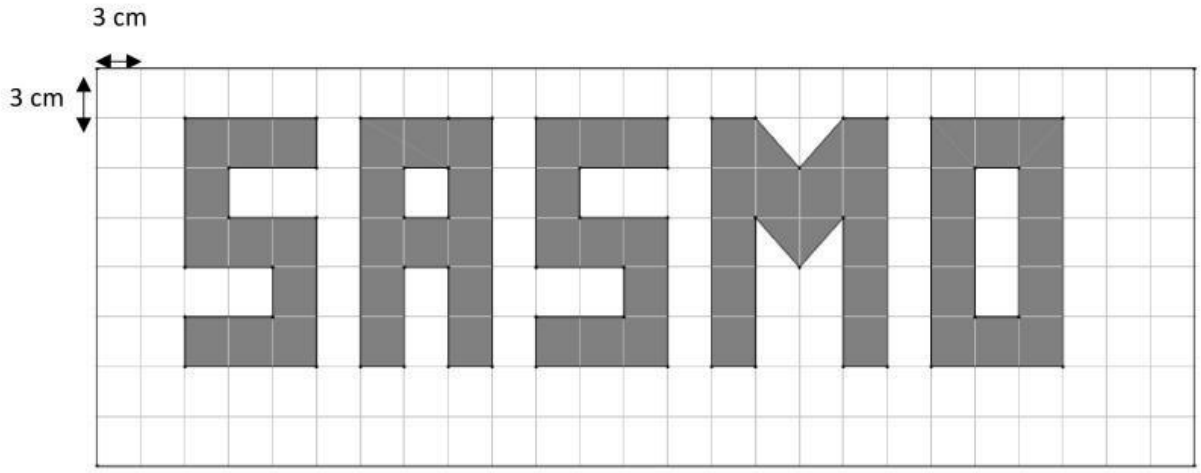
$$303 \leftrightarrow 4$$

$$333 \leftrightarrow 1$$

$$404 \leftrightarrow 2$$

$$900 \leftrightarrow x$$

Ques 10) In the figure below, what percentage of the grid below is shaded?



Ques 11) The number of digits used to number the pages of a book is twice the number of pages of the book. If the number of pages of the book is a three digit number , how many pages does the book have ?

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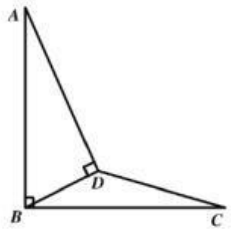
Ques 12) In the diagram , angle ABC = angle ADB = 90 , AB = BC , BD = 4 cm and AD = 6 cm . Find the area of triangle BDC



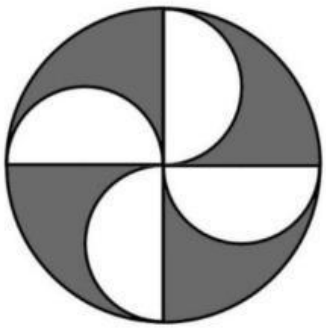
Ques 13) In the following cryptarithm , all the different letters stand for different digits.

$$\begin{array}{cccccc} & P & Q & R & S \\ \times & & & & 9 \\ \hline & S & R & Q & P \\ \hline \end{array}$$

Find the value of the 4-digit number PQRS

Ques 14) Jason randomly placed digits 1, 2, 3, ..., 9 around a circle. When he read three consecutive digits in clockwise order, he got a three-digit whole number. If there are 9 such three-digit numbers, find the sum of the 9 numbers.

Ques 15) In the diagram, the unshaded area is made of 4 semicircles touching at the centre of the large circle. If the diameter of the large circle is 28 cm , find the area of the shaded region.



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