

**GANIT PRABHUTWA EXAMINATION**

Date : 09-12-2018

Std - VIII

Total Marks : 100

Time : 12 noon to 3 pm

**N.B. For Q. No. 2 to 5 proper procedure and explanation is necessary.**

**Q. 1 A) Choose the correct alternative answer in each of the following. 10**

1)  $(0.1)^5 = \dots\dots\dots$

- A) 0.1                      B) 1                      C) 0.001                      D) 0.00001

2) Find the hypotenus of a right angled triangle having sides 20 and 21.

- A) 29                      B) 28                      C) 41                      D) 25

3) Find the value of  $a^2 + b^2$  if  $a + b = 12$  and  $ab = 10$ .

- A) 124                      B) 104                      C) 164                      D) 144

4) Which member of the set  $\{2, 3, 5, 7, 9, 11, 13\}$  is not a prime number?

- A) 2                      B) 11                      C) 9                      D) 5

5) Which of the following is the product of 8,937 and 125?

- A) 93700                      B) 937000                      C) 7496500                      D) 4685000

6) Find  $x : y : z$  if  $2x = 3y = 4z$ .

- A) 6 : 4 : 3                      B) 2 : 3 : 4                      C) 4 : 3 : 8                      D) 3 : 2 : 3

7) Find the difference between the simple interest and the compound interest on ₹ 1600 at the rate 5 p.c.p.a. for 2 years.

- A) ₹ 160                      B) ₹ 80                      C) ₹ 4                      D) ₹ 5

8) Find the middle term (geometric mean) of 0.25 and 400.

- A) 10                      B) 1                      C) 100                      D) 0.1

9) Mohanlal got a profit  $\frac{1}{4}$ <sup>th</sup> of the cost price when he sold an article for ₹ 400. Find the profit percent.

- A) 40                      B) 10                      C) 25                      D) 20

10) Whole numbers  $m, n$  are such that  $m^n = 121$ . Find the value of  $(m - 1)^{n+1}$ .

- A) 1024                      B) 10000                      C) 1                      D) 1000

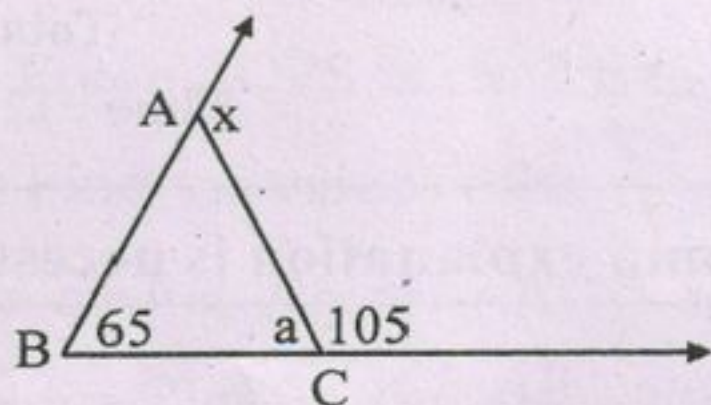


**B) Write only answer of each of the following subquestions.**

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- 1) The sides of a rectangle are 24 cm and 18 cm. Find the perimeter of the square drawn on its diagonal.

2)



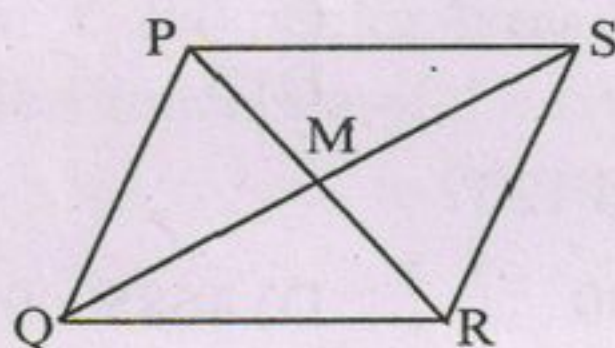
Find the values of  $x$  and  $a$ , from the information given in the adjoining figure.

- 3) Rakhi completes a task in 10 days, while Rama takes 5 days to finish the same task. If they work together, in how many days will they finish the task?
- 4) If  $18^3 = 5832$ , then find the value of  $\sqrt[3]{5.832} \times 5^2$ .
- 5) The bisectors of  $\angle B$  and  $\angle C$  of  $\triangle ABC$  meet at incentre  $I$ .  $m\angle A = 54^\circ$ , find the measure of  $\angle BIC$ .

**Q.2) Solve the following.**

15

1)



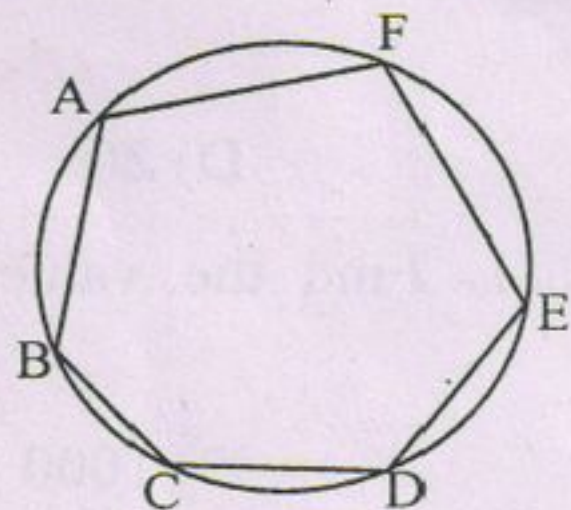
$\square PQRS$  is a rhombus.  $m\angle MQR = 40^\circ$ . Find the measures of :  $\angle QSR$ ,  $\angle PQR$ ,  $\angle QPS$ .

- 2) Exactly at what time between 2 and 3 will the hour hand overlap the minute hand?
- 3) Find the average of the first 20 consecutive odd numbers.
- 4) By simple interest, a certain amount triples in 12 years at a certain rate of interest. Find the rate of interest.
- 5) Construct a rectangle having diagonal 6.0 cm and the measure of an angle between the diagonals  $120^\circ$ .

**Q.3) Solve the following subquestions.**

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1)



The points  $A, B, C, D, E, F$  lie on a circle.

Find  $m\angle BAF + m\angle FED + m\angle DCB$ .



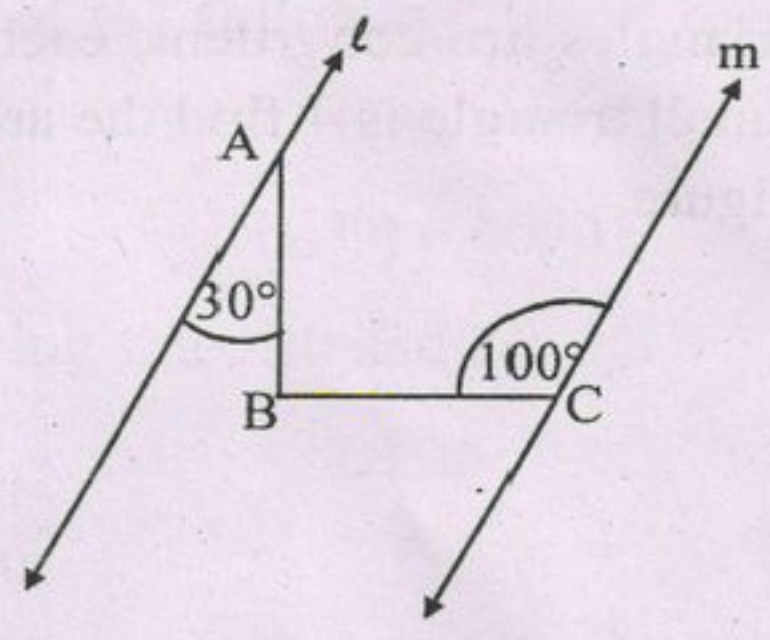
2) GCD of two numbers is 23 and their product is 19044. Find all possible pairs of such numbers.

3) Simplify  $\frac{x^2 - 12x + 27}{x^2 - 7x - 18}$

4) Solve:  $\frac{1-x}{6} + \frac{2x}{3} - \frac{1-7x}{4} = 2\frac{1}{6}$

5) In the adjoining figure, line  $\ell \parallel$  line  $m$ .

From the information given in the figure find the measure of  $\angle ABC$ .



**Q. 4) Solve the following subquestions.**

**20**

1) Divide  $(x^4 + 4)$  by  $(x^2 + 2x + 2)$ . Find quotient and remainder. Write answer as

$$\text{dividend} = \text{divisor} \times \text{quotient} + \text{remainder}$$

2) The speed of a boat in still water is 25 km/hr. The time required for the boat to travel 120 km against a stream is  $\frac{3}{2}$  times the time required to travel the same distance along the same stream. Find the speed of the stream.

3) Solve:  $\sqrt{6^{\circ} + \frac{2}{3}} = (0.6)^{2-3x}$

4) If a polygon has 90 diagonals, then find the number of sides of the polygon.

**Q. 5) Solve the following subquestions :**

**25**

1) Factorise :  $(x^2 + 8x)(x^2 + 8x + 5) - 14$

2) Find  $x^3 - \frac{1}{x^3}$  if  $3x - 4 = \frac{3}{x}$



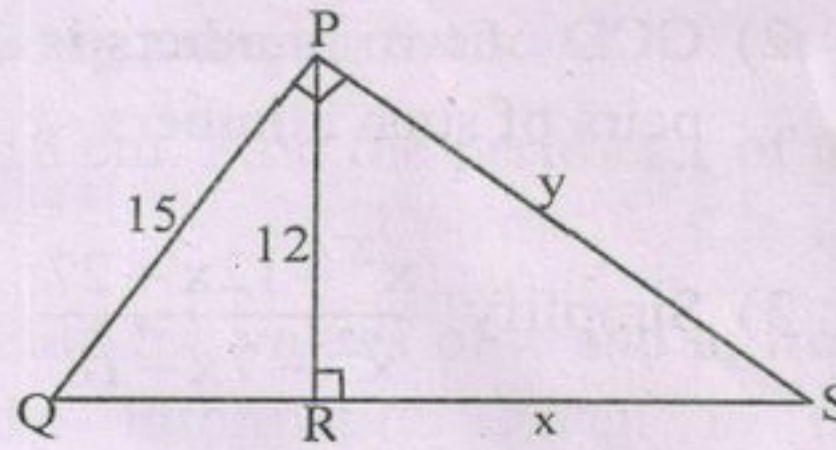
3) In the adjoining figure,  $\angle QPS = 90^\circ$ ,

$\angle QPR \cong \angle PSR$ ,  $PR \perp QS$ ,  $PS = y$ ,

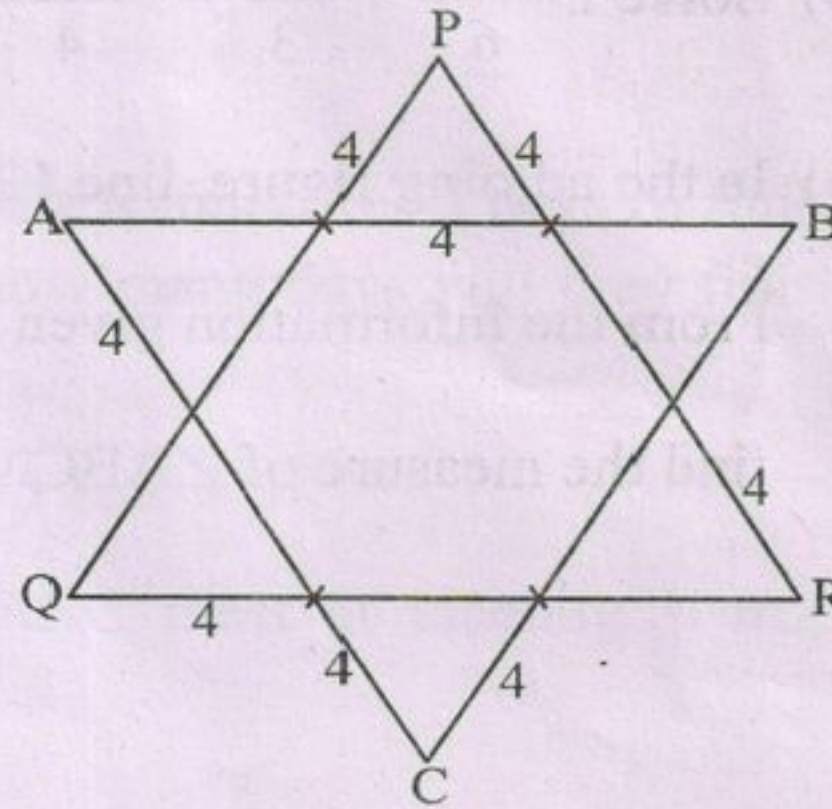
$RS = x$ ,  $PR = 12$ ,  $PQ = 15$ .

then - (i) Prove  $\Delta QPS$  is similar to  $\Delta QRP$

(ii) Find the values of  $x$ ,  $y$ .



4) In the adjoining figure  $\Delta ABC$  and  $\Delta PQR$  are congruent. All small triangles are congruent, each side of small triangle is 4 find the area of the figure.



5) Some kg of tea at the rate ₹ 320 per kg is mixed with 5 kg of tea of the rate of ₹ 250 per kg. Now the rate of the mixture so formed is ₹ 300 per kg. How much tea of the rate of ₹ 320 per kg was taken?

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