

1. if one of the zeroes of the quadratic polynomial  $x^2 + 3x + k$  is 2, then the value of  $k$  is

- (a) 10
- (b) -10
- (c) -7
- (d) -2

2. the total number of factors of a prime number is

- (a) 1
- (b) 0
- (c) 2
- (d) 3

3. the quadratic polynomial, the sum of whose zeros is -5 and their product is 6, is

- (a)  $x^2 + 5x + 6$
- (b)  $x^2 - 5x + 6$
- (c)  $x^2 - 5x - 6$
- (d)  $-x^2 + 5x + 6$

4. the value of  $k$  for which the system of equations  $x+y-4 = 0$  and  $2x+ky = 3$

- (a) -2
- (b)  $\neq 2$
- (c) 3
- (d) 2

5. the HCF and the LCM of 12, 21, 15 respectively are

- (a) 3, 140

- (b) 12,420  
(c) 3,420  
(d) 420,3
6. the value of  $x$  for which  $2x, (x + 10)$  and  $(3x + 2)$  are the three consecutive terms of an AP,is
- (a) 6  
(b) -6  
(c) 18  
(d) -18
7. the first term of an AP is  $P$  and the commen difference is  $q$ ,then its  $10^{th}$  term is
- (a)  $q + 9p$   
(b)  $p - 9q$   
(c)  $p + 9q$   
(d)  $2p + 9q$
8. the distance between the points  $(a \cos \theta + b \sin \theta, 0)$  and  $(0, a \sin \theta - b \cos \theta)$ ,is
- (a)  $a^2 + b^2$   
(b)  $a^2 - b^2$   
(c)  $\sqrt{a^2 + b^2}$   
(d)  $\sqrt{a^2 - b^2}$
9. if the point  $p(k, 0)$  divides the line segment joining the points  $(2, -2)$  and  $B(-7, 4)$  in the ratio 1:2, then the value of  $k$  is
- (a) 1  
(b) 2

(c) -2

(d) -1

10. the value of  $p$ ,for whichthe points a(3, 1),B(5,  $p$ )and c(7, -5) are collinear,is

(a) -2

(b) 2

(c) -1

(d) 1

11. in FIG.1, $\Delta ABC$  is circumscribing a circle, the length of BC is 1cm.

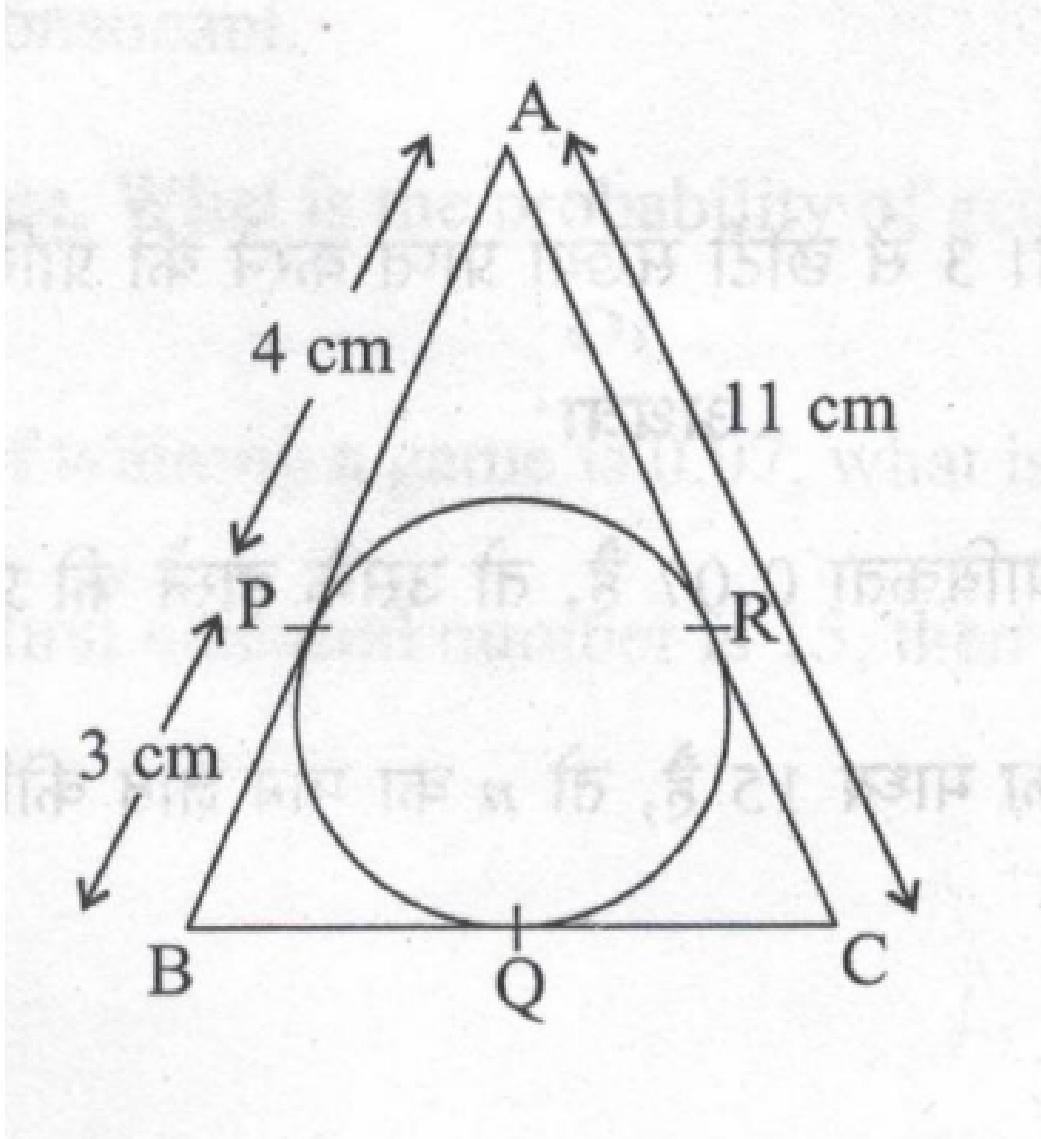


Figure 1: triangle

12. given

$$\Delta ABC \Delta PQR, \text{ if } \frac{AB}{PQ} = \frac{1}{3}, \text{ then } \frac{ar(\Delta ABC)}{ar(\Delta PQR)} 1 \text{ cm.} \quad (1)$$

13.  $ABC$  is an equilateral triangle of side  $2a$ , then length of one of its altitude is  
14.

$$\frac{\cos 80^\circ}{\sin 10^\circ} + \cos 59^\circ \csc 31^\circ \quad (2)$$

15. the value of  $\left(\sin^2 \theta + \frac{1}{1+\tan^2 \theta}\right)$

16. the value of

$$(1 + \tan^2 \theta)(1 - \sin \theta)(1 + \sin \theta) \quad (3)$$

17. The ratio of the length of a vertical rod and the length of its shadow is  $1 : \sqrt{3}$   
Find the angle of elevation of the sun at that moment?

18. Two cones have their heights in the ratio  $1 : 3$  and radii in the ratio  $3 : 1$ .  
What is the ratio of their volumes?

19. A letter of English alphabet is chosen at random. What is the probability  
that the chosen letter is a consonant.

20. A die is thrown once. What is the probability of getting a number less than  
3?

21. If the probability of winning a game is 0,07, what is the probability of losing  
it?

22. If the mean of the first  $n$  natural numbers is 15, then find  $n$ .