

# KNOWLEDGE HORIZON CLASSES

## Test Series

- Q1.**  $\sqrt{3}$  is  
(i) An integer  
(ii) A rational number  
(iii) An irrational number  
(iv) None of these
- Q2.** Which of the following is not a polynomial?  
(i)  $\sqrt{3}x^2 - 2\sqrt{3}x + 3$   
(ii)  $\frac{3}{2}x^3 - 5x^2 - \frac{1}{\sqrt{2}}x - 1$   
(iii)  $x + \frac{1}{x}$   
(iv)  $5x^2 - 3x + \sqrt{2}$
- Q3.**  $\frac{x}{6} + \frac{y}{15} = 4,$   
 $\frac{x}{3} - \frac{y}{12} = \frac{19}{4}$   
(i)  $x = 17, y = 20$   
(ii)  $x = 18, y = 15$   
(iii)  $x = 12, y = 21$   
(iv)  $x = 14, y = 17$
- Q4.** If one root of  $3x^2 + 11x + k = 0$  be reciprocal of the other, then  
(i)  $k = \frac{1}{3}$   
(ii)  $k = -3$   
(iii)  $k = \frac{-11}{3}$   
(iv)  $k = 3$
- Q5.** Find the value(s) of k for which each of the following quadratic equations has real and equal roots:  
 $9x^2 - 24x + k = 0$

- (i)  $k = 6$                       (ii)  $k = 12$   
 (iii)  $k = 10$                     (iv)  $k = 16$

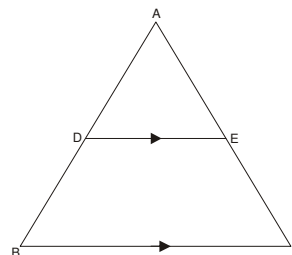
**Q6.** How many natural numbers between 1 and 1000 are divisible by 5?

- (i) 197                              (ii) 198  
 (iii) 199                            (iv) 200

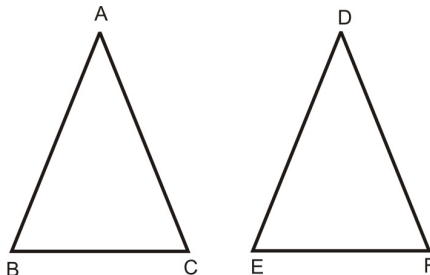
**Q7.** In the given figure, In  $\Delta ABC$ ,  $DE \parallel BC$ , so that  $AD = 2.4$  cm,  $AE = 3.2$  cm and  $EC = 4.8$  cm

Then,  $AB = ?$

- (i) 3.6 cm                      (ii) 6 cm  
 (iii) 6.4 cm                    (iv) 1.6 cm



**Q8.** In the given figure,  $\Delta ABC$  and  $\Delta DEF$  are similar,  $BC = 3$  cm,  $EF = 4$  cm and area of the  $\Delta ABC = 54$  cm<sup>2</sup>. Determine the area of the  $\Delta DEF$ .



- (i) 225 sq. cm    (ii) 144 sq. cm    (iii) 96 sq. cm    (iv) 00 sq. cm

**Q9.** Find the length of altitude  $AD$  of an isosceles  $\Delta ABC$  in which  $AB = AC = 2a$  units and  $BC = a$  units.

- (i)  $\frac{a\sqrt{10}}{3}$  units                      (ii)  $\frac{a\sqrt{15}}{2}$  units  
 (iii)  $\frac{a\sqrt{10}}{2}$  units                      (iv)  $\frac{a\sqrt{15}}{3}$  units

**Q10.** In which quadrant does  $(2, -4)$  lie?

- (i) I                                      (ii) II  
 (iii) III                                  (iv) IV

**Q11.** If  $\operatorname{cosec} A = \frac{2}{\sqrt{3}}$ , and  $A$  is acute, then  $\tan A = ?$

- (i)  $\frac{1}{\sqrt{3}}$                               (ii)  $\frac{\sqrt{3}}{2}$   
 (iii)  $\sqrt{3}$                                 (iv) 2

**Q12.** If the angle of elevation of a tower from a distance of 100 meters from its foot is  $60^\circ$ , then the height of the tower is

(i)  $100\sqrt{3} m$                       (ii)  $\frac{100}{\sqrt{3}} m$

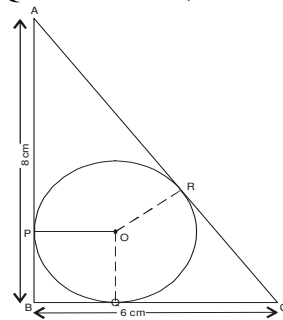
(iii)  $50\sqrt{3} m$                       (iv)  $\frac{200}{\sqrt{3}} m$

**Q13.** In a circle of radius 7 cm, tangent PT is drawn from a point P such that  $PT = 24$  cm, If O is the centre of the circle, then length of OP is

(i) 30 cm                                  (ii) 28 cm  
(iii) 25 cm                                (iv) 31 cm

**Q14.** In the given figure,  $\triangle ABC$  is right-angled at B such that  $BC = 6$  cm, and  $AB = 8$  cm. A circle with centre O has been inscribed inside the triangle.  $OP \perp AB$ ,  $OQ \perp BC$  and  $OR \perp AC$ . If  $OP = OQ = OR = x$  cm, then  $x = ?$

- (i) 2 cm  
(ii) 3 cm  
(iii) 2.5 cm  
(iv) 4 cm



**Q15.** If the circumference and the area of a circle are numerically equal, then diameter of the circle is

(i)  $\frac{\pi}{2}$                                       (ii)  $2\pi$   
(iii) 2                                        (iv) 4

**Q16.** Find the total surface area of a Cuboid whose length is 3 cm, breadth is 4 cm and height is 5 cm.

- (i)  $94 \text{ cm}^2$   
(ii)  $86 \text{ cm}^2$   
(iii)  $60 \text{ cm}^2$   
(iv)  $49 \text{ cm}^2$

**Q17.** Find the volume of a cube whose side is 6 cm.

- (i)  $216 \text{ cm}^3$   
(ii)  $369 \text{ cm}^3$   
(iii)  $226 \text{ cm}^3$   
(iv)  $256 \text{ cm}^3$

**Q18.** The diameter of a sphere is 14 cm. Its volume is

(i)  $1428 \text{ cm}^3$                               (ii)  $1439 \text{ cm}^3$   
(iii)  $1437\frac{1}{3} \text{ cm}^3$                               (iv)  $1440 \text{ cm}^3$

**Q19.** The mean of the following distribution is 157.

Height in cm	150	152	152	156	200
f	2	2	x	4	1

Then x =

- (i) 1
- (ii) 2
- (iii) 3
- (iv) 4

**Q20.** When a die is thrown once, the probability of getting an even number is

- (i)  $\frac{1}{2}$
- (ii)  $\frac{2}{5}$
- (iii)  $\frac{5}{6}$
- (iv)  $\frac{1}{6}$