



# MATHS

## BOOKS - X BOARDS

### QUESTION PAPER 2022 TERM 1 SET 1 BASIC

#### Section A

1. HCF of 92 and 152 is

A. 4

B. 19

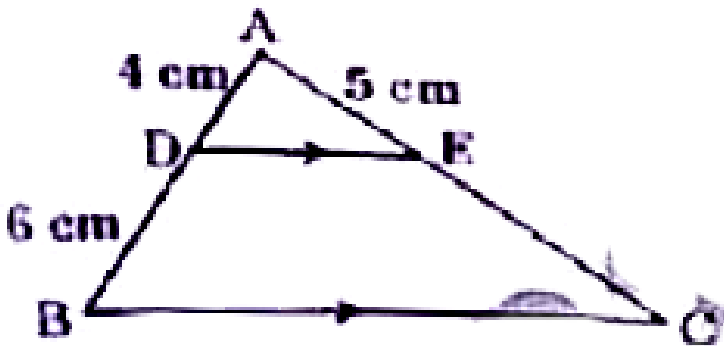
C. 23

D. 57

**Answer:**

 **Watch Video Solution**

2. In  $\triangle ABC$ ,  $DE \parallel BC$ ,  $AD = 4$  cm,  $DB = 6$  cm and  $AE = 5$  cm. The length of  $EC$  is



A. 7 cm

B. 6.5 cm

C. 7.5 cm

D. 8 cm

**Answer:**



**Watch Video Solution**

3. The value of  $k$ , for which the pair of linear equations  $x + y - 4 = 0$ ,  $2x + ky - 3 = 0$  have no solution, is

A. 0

B. 2

C. 6

D. 8

**Answer:**



**Watch Video Solution**

4. The value of  $(\tan^2 45^\circ - \cos^2 60^\circ)$  is

A.  $1/2$

B.  $1/4$

C.  $3/2$

D.  $3/4$

**Answer:**



**Watch Video Solution**

5. A point  $(x, 1)$  is equidistant from  $(0, 0)$  and  $(2, 0)$ .

The value of  $x$  is

A. 1

B. 0

C. 2

D.  $1/2$

**Answer:**



**Watch Video Solution**

6. Two coins are tossed together. The probability of getting exactly one head is

A.  $1/4$

B.  $1/2$

C.  $3/4$

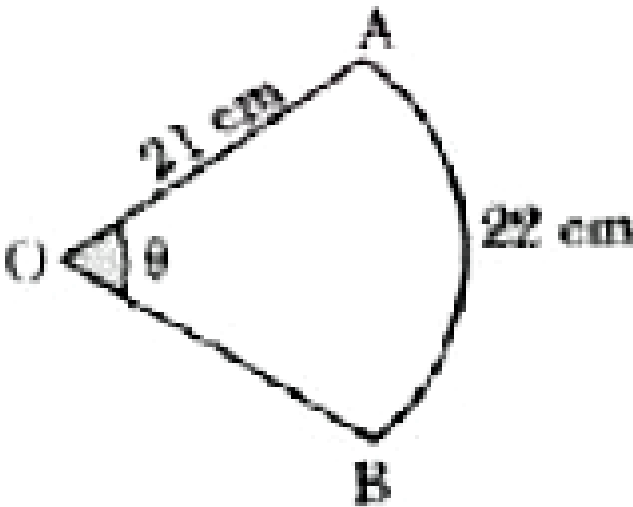
D. 1

**Answer:**



**Watch Video Solution**

7. A circular arc of length 22 cm subtends an angle  $\theta$  at the centre of the circle of radius 21 cm. The value of  $\theta$  is



A.  $90^\circ$

B.  $50^\circ$

C.  $60^\circ$

D.  $30^\circ$

**Answer:**



**Watch Video Solution**

**8.** A quadratic polynomial having sum and product of its zeroes as 5 and 0 respectively is

A.  $x^2 + 5x$

B.  $2x(x - 5)$

C.  $5x^2 - 1$



D.  $x^2 - 5x + 5$

**Answer:**



**Watch Video Solution**

9. If  $P(E) = 0.65$ , the the value of  $P(\text{not } E)$  is

A. 1.65

B. 0.25

C. 0.65

D. 0.35

**Answer:**



Watch Video Solution

10. It is given that  $\triangle DEF \sim \triangle PQR$ .  $EF:QR = 3:2$ ,

then value of  $\text{ar}(DEF) : \text{ar}(PQR)$  is

A. 4:9

B. 4:8

C. 9:2

D. 9:4

**Answer:**



Watch Video Solution

11. Zeroes of a quadratic polynomial  $x^2 - 5x + 6$  are

A.  $-5, 1$

B.  $5, 1$

C.  $2, 3$

D.  $-2, -3$

**Answer:**



**Watch Video Solution**

12.  $\frac{57}{300}$  is a

A. non-terminating and non-repeating decimal expansion

B. terminating decimal expansion after 2 places of decimals.

C. terminating decimal expansion after 3 places of decimals

D. non-terminating but repeated decimal expansion.

**Answer:**



**Watch Video Solution**

**13.** Perimeter of a rectangle whose length ( $l$ ) is 4 cm more than twice its breadth ( $b$ ) is 14 cm. The pair of linear equations representing the above information is

A.  $l + 4 = 2b$

$$2(l + b) = 14$$

B.  $l - b = 4$

$$2(l + b) = 14$$

C.  $l = 2b + 4$

$$l + b = 14$$

D.  $l = 2b + 4$

$$2(l + b) = 14$$

**Answer:**



**Watch Video Solution**

**14.** solve  $5.\overline{213}$  can also be written as

A. 5.213213213...

B. 5.2131313...

C. 5.213

D.  $5213/1000$

**Answer:**



**Watch Video Solution**

15. The ratio in which the point  $(4,0)$  divides the line segment joining the points  $(4, 6)$  and  $(4, -8)$  is

A.  $1:2$

B.  $3:4$

C.  $4:3$

D.  $1:1$

**Answer:**



**Watch Video Solution**

16. Which of the following is not defined ?

A.  $\sec 0^\circ$

B.  $\csc 90^\circ$

C.  $\tan 90^\circ$

D.  $\cot 90^\circ$

**Answer:**

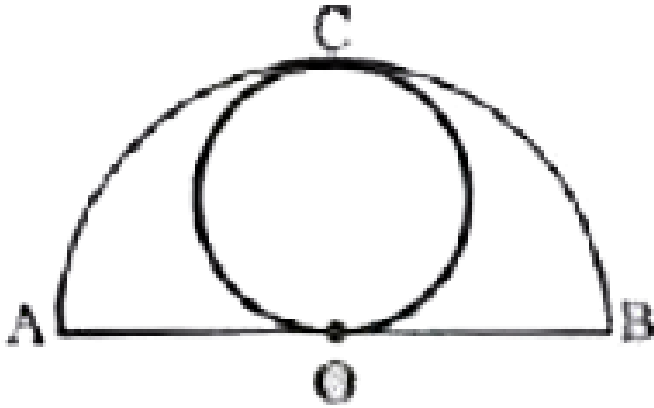


**Watch Video Solution**

**17.** In the given figure, a circle is touching a semi-circle at C and its diameter AB at O. If  $AB = 28$  cm, what is



the radius of the inner circle ?



A. 14 m

B. 28 cm

C. 7 cm

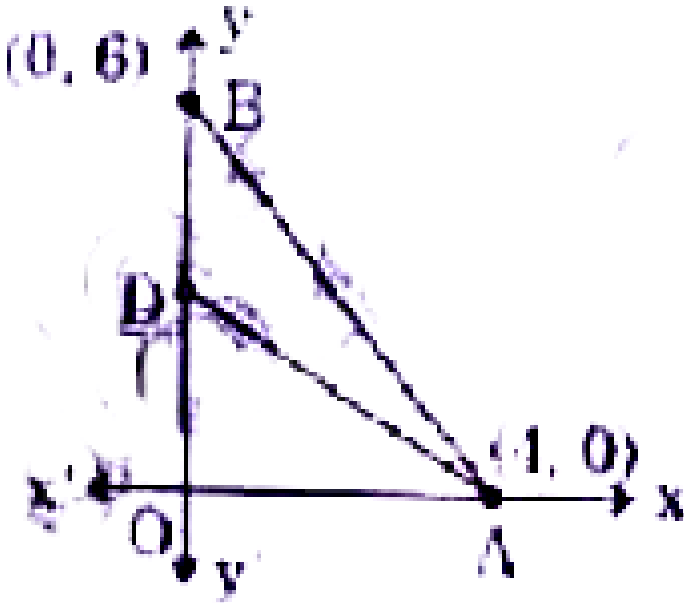
D.  $\frac{7}{2}cm$

**Answer:**



**Watch Video Solution**

18. The vertices of a triangle OAB are  $O(0, 0)$ ,  $A(4, 0)$  and  $B(0,6)$ . The median AD is drawn on OB. The length AD is



A.  $\sqrt{52}$  units

B. 5 units

C. 25 units

D. 10 units

**Answer:**



**Watch Video Solution**

**19.** In a right -angled triangles  $PQR, \angle Q = 90^\circ$ . If  $\angle P = 45^\circ$ , then value of  $\tan P - \cos^2 R$  is

A. 0

B. 1

C.  $1/2$

D.  $3/2$

**Answer:**



**Watch Video Solution**

20. If  $\tan \theta = \frac{2}{3}$ , then the value of  $\sec \theta$  is

A.  $\frac{\sqrt{13}}{3}$

B.  $\frac{\sqrt{5}}{3}$

C.  $\sqrt{\frac{13}{3}}$

D.  $\frac{3}{\sqrt{13}}$

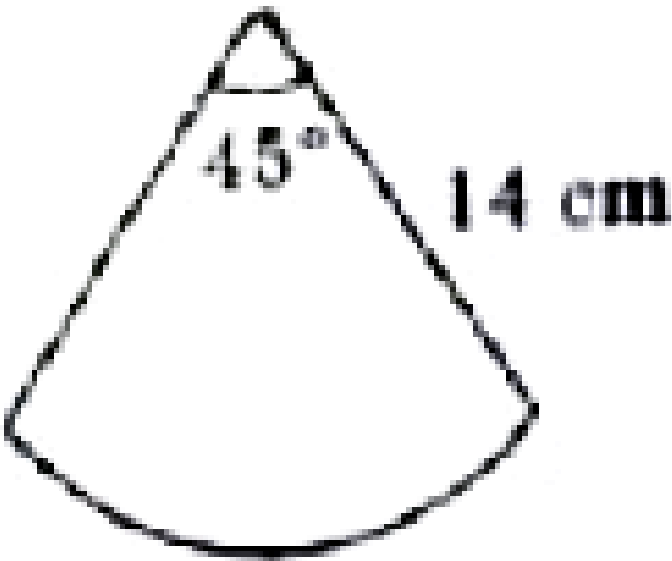
**Answer:**



**Watch Video Solution**

## Section B

1. The perimeter of the sector of a circle of radius 14 cm and central angle  $45^\circ$  is



A. 11 cm

B. 22 cm

C. 28 cm

D. 39 cm

**Answer:**



**Watch Video Solution**

2. A bag contain 16 red balls, 8 green balls and 6 blue balls. One ball is drawn at random . The probability that it is blue ball is

A.  $\frac{1}{6}$

B.  $\frac{1}{5}$

C.  $\frac{1}{30}$

D.  $\frac{5}{6}$

**Answer:**



**Watch Video Solution**

**3. If  $\sin \theta = \cos \theta$ , then value of  $\theta$  is :**

A.  $30^\circ$

B.  $45^\circ$

C.  $90^\circ$

D.  $0^\circ$

**Answer:**



**Watch Video Solution**

4. The probability of happening of an event is 0.02.

The probability of not happening of the event is

A. 0.02

B. 0.80

C. 0.98

D.  $\frac{49}{100}$

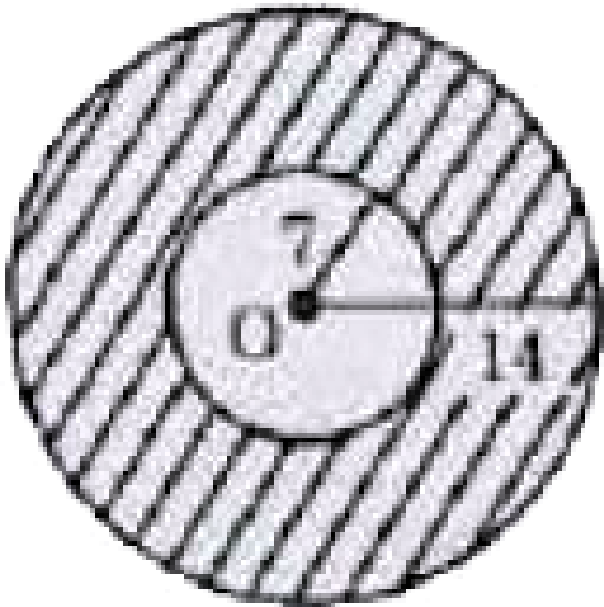
**Answer:**



**Watch Video Solution**



5. Two concentric circles are centred at O. The area of shaded region, if outer and inner radii are 14 cm and 7 cm respectively, is



A.  $462\text{cm}^2$

B.  $154\text{cm}^2$

C.  $231\text{cm}^2$

D.  $308\text{cm}^2$

**Answer:**



**Watch Video Solution**

6.  $\frac{1}{1 + \sin \theta} + \frac{1}{1 - \sin \theta}$  can be simplified to get

A.  $2 \cos^2 \theta$

B.  $\frac{1}{2} \sec^2 \theta$

C.  $\frac{2}{\sin^2 \theta}$

D.  $2 \sec^2 \theta$

**Answer:**



**Watch Video Solution**

7. The origin divides the line segment A joining the points A(1,-3) and B (-3,9) in the ratio :

A. 3 : 1

B. 1 : 3

C. 2 : 3

D. 1 : 1

**Answer:**



**Watch Video Solution**

8. The perpendicular bisector of a line segment  $A(-8,0)$  and  $B(8,0)$  passes through a point  $(0,k)$ . The value of  $k$  is

- A. 0 only
- B. 0 or 8 only
- C. any real number
- D. any non-zero real number

**Answer:**



9. Which of the following is correct statement ?

A. Two congruent figure are always similar.

B. Two similar figure are always congruent.

C. All rectangles are similar

D. The polygons having same number of sides are similar.

**Answer:**



**Watch Video Solution**

10. The solution of the pair of linear equation  $x = -5$  and  $y=6$  is

A.  $(-5,6)$

B.  $(-5,0)$

C.  $(0,6)$

D.  $(0,0)$

**Answer:**



**Watch Video Solution**

11. A circle of radius 3 units is centered at  $(0,0)$  . Which of the following points lie outside the circle ?

A.  $(-1,-1)$

B.  $(0,3)$

C.  $(1,2)$

D.  $(3,1)$

**Answer:**



**Watch Video Solution**

12. The value of  $k$  for which the pair of linear equations  $3x + 5y = 8$  and  $kx + 15y = 24$  has infinitely many solutions, is

A. 3

B. 9

C. 5

D. 15

**Answer:**



**Watch Video Solution**



13. HCF of two consecutive even number is

A. 0

B. 1

C. 2

D. 4

**Answer:**



[Watch Video Solution](#)

14. The zeroes of quadratic polynomial

$$x^2 + 99x + 127 \text{ are}$$

A. both negative

B. both positive

C. one positive and one negative

D. reciprocal of each other

**Answer:**



**Watch Video Solution**

**15.** The mid-point of line segment joining the points

$(-3,9)$  and  $(-6,-4)$  is

A.  $\left(\frac{-3}{2}, \frac{-13}{2}\right)$

B.  $\left(\frac{9}{2}, \frac{-5}{2}\right)$

C.  $\left(\frac{-9}{2}, \frac{5}{2}\right)$

D.  $\left(\frac{9}{2}, \frac{5}{2}\right)$

**Answer:**



**Watch Video Solution**

**16.** The decimal expansion of  $\frac{13}{2 \times 5^2 \times 7}$  is

- A. terminating after 1 decimal place.
- B. non-terminating and non-repeating
- C. terminating after 2 decimal places.

D. non-terminating but repeating

Answer:



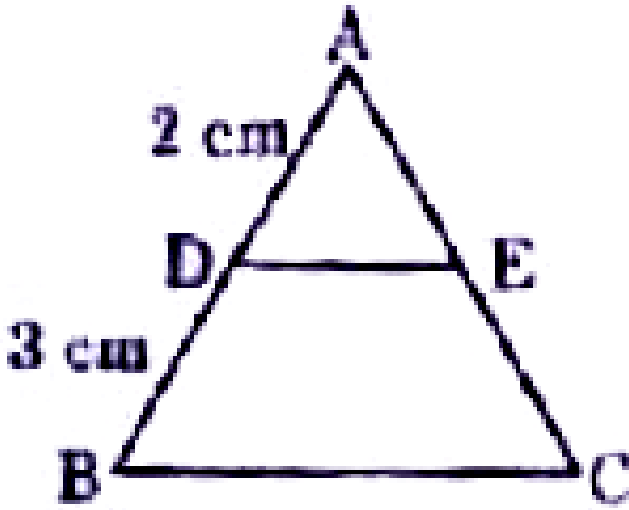
Watch Video Solution

17.

In

$\Delta ABC$ ,  $DE \parallel BC$ ,  $AD = 2\text{cm}$ ,  $DB = 3\text{cm}$ ,  $DE:BC$

is equal to



A. 2 : 3

B. 2 : 5

C. 1 : 2

D. 3 : 5

**Answer:**



Watch Video Solution

18. The  $(HCF \times LCM)$  for the numbers 50 and 20 is

A. 1000

B. 50

C. 100

D. 500

**Answer:**



**Watch Video Solution**

19. For which natural number  $n$ ,  $6^n$  ends with digit zero ?

A. 6

B. 5

C. 0

D. None

**Answer:**



[Watch Video Solution](#)

20.  $(1 + \tan^2 A)(1 + \sin A)(1 - \sin A)$  is equal to

A.  $\frac{\cos^2 A}{\sec^2 A}$

B. 1

C. 0

D. 2

**Answer:**



**Watch Video Solution**

## Section C Case Study

1. Sukriti throws a ball upwards , from a rooftop which is 8 m high from ground level . The ball reaches to



some maximum height and then returns and hit the ground .

Its height of the ball at time  $t$  (in sec) is represented by  $h(m)$  , then equation of its path is given as

$$h = -t^2 + 2t + 8$$

Based on above information , answer the following



The maximum height achieved by ball is

A. 7 m

B. 8 m

C. 9m

D. 10 m

**Answer:**



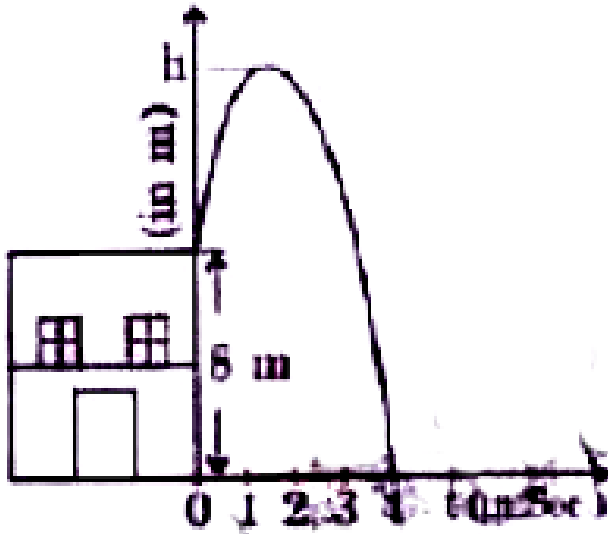
**Watch Video Solution**

2. Sukriti throws a ball upwards , from a rooftop which is 8 m high from ground level . The ball reaches to some maximum height and then returns and hit the ground .

It height of the ball at time  $t$  (in sec) is represented by  $h(m)$  , then equation of its path is given as

$$h = -t^2 + 2t + 8$$

Based on above information , answer the following



The polynomial represented by above graph is

- A. linear polynomial
- B. quadratic polynomial
- C. constant polynomial
- D. cubic polynomial

**Answer:**



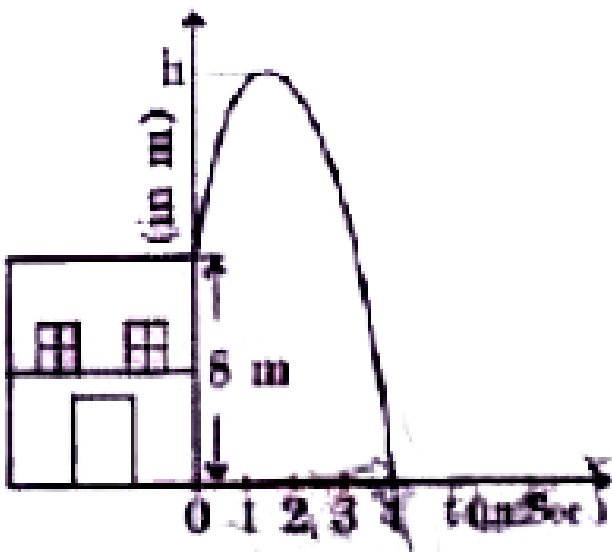
**Watch Video Solution**

3. Sukriti throws a ball upwards , from a rooftop which is 8 m high from ground level . The ball reaches to some maximum height and then returns and hit the ground .

It height of the ball at time  $t$  (in sec) is represented by  $h(m)$  , then equation of its path is given as

$$h = -t^2 + 2t + 8$$

Based on above information , answer the following



Time taken by ball to reach maximum height is

- A. 2 sec
- B. 4 sec
- C. 1 sec
- D. 2 min

**Answer:**



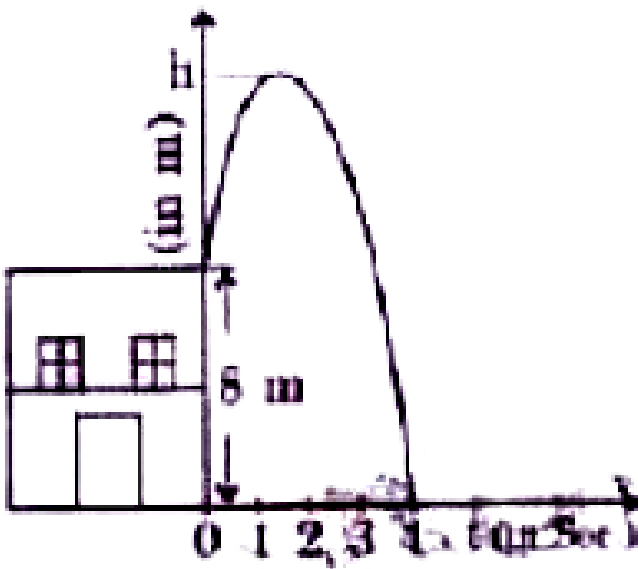
[Watch Video Solution](#)

4. Sukriti throws a ball upwards , from a rooftop which is 8 m high from ground level . The ball reaches to some maximum height and then returns and hit the ground .

It height of the ball at time  $t$  (in sec) is represented by  $h(m)$  , then equation of its path is given as

$$h = -t^2 + 2t + 8$$

Based on above information , answer the following



Number of zeroes of the polynomial whose graph is given, is

- A. 1
- B. 2
- C. 0
- D. 3

**Answer:**



**Watch Video Solution**

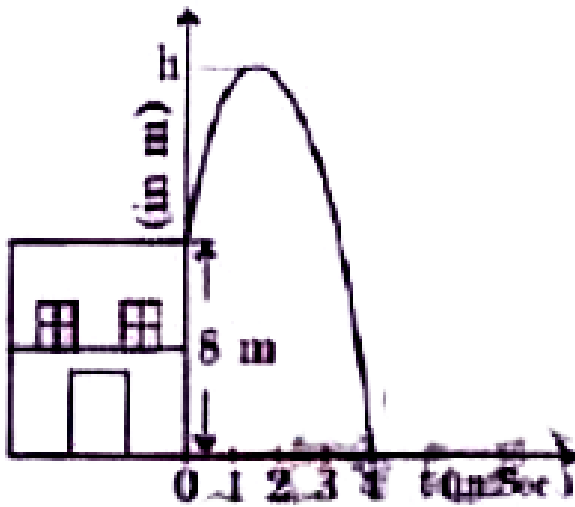
5. Sukriti throws a ball upwards , from a rooftop which is 8 m high from ground level . The ball reaches to some maximum height and then returns and hit the ground .

It height of the ball at time  $t$  (in sec) is represented by  $h(m)$  , then equation of its path is given as

$$h = -t^2 + 2t + 8$$

Based on above information , answer the following





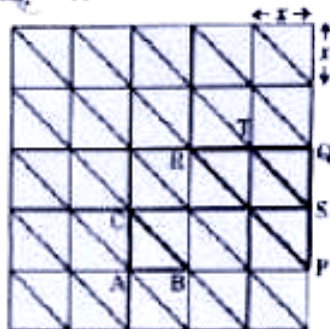
Zeroes of the polynomial are

- A. 4
- B.  $-2, 4$
- C.  $2, 4$
- D.  $0, 4$

**Answer:**

[Watch Video Solution](#)

### Case Study - II



Diagrammatic View

6.

Quilts are available in various colours and design , Geometric design includes shapes like squares , triangles , rectangles , hexagons etc.

One such design is shown above. Two triangles are highlighted  $\triangle ABC$  and  $\triangle PQR$

Based on above information , answer the following questions :

Which of the following criteria is not suitable for  $\triangle ABC$  to be similar to  $\triangle QRP$ ?

A. SAS

B. AAA

C. SSS

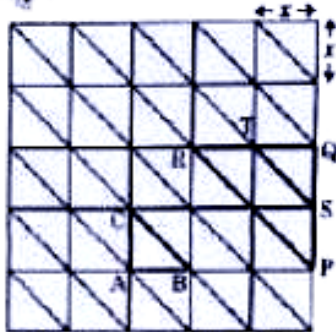
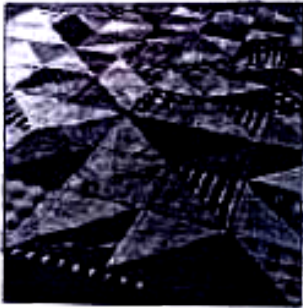
D. RHS

**Answer:**



**Watch Video Solution**

### Case Study - II



Diagrammatic View

7.

Quilts are available in various colours and design , Geometric design includes shapes like squares , triangles , rectangles , hexagons etc.

One such design is shown above. Two triangles are highlighted  $\triangle ABC$  and  $\triangle PQR$

Based on above information , answer the following questions :

If each square is of length  $x$  units , then length  $BC$  is equal to .

A.  $x\sqrt{2}$  unit

B.  $2x$  unit

C.  $2\sqrt{x}$  units

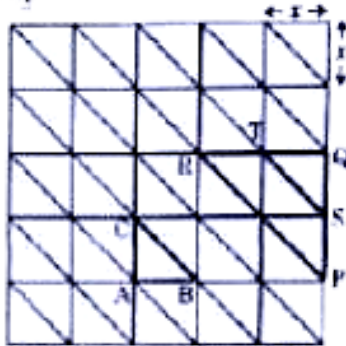
D.  $x\sqrt{x}$  unit

**Answer:**



**Watch Video Solution**

### Case Study - II



Diagrammatic View

8.

Quilts are available in various colours and design , Geometric design includes shapes like squares , triangles , rectangles , hexagons etc.

One such design is shown above. Two triangles are highlighted  $\triangle ABC$  and  $\triangle PQR$

Based on above information , answer the following questions :

Ratio  $BC : PR$  is equal to

A. 2 : 1

B. 1 : 4

C. 1 : 2

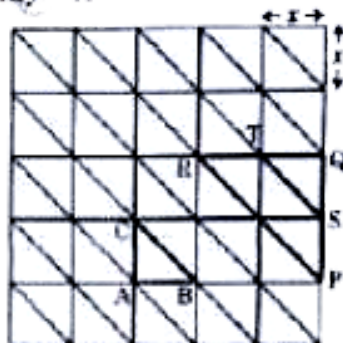
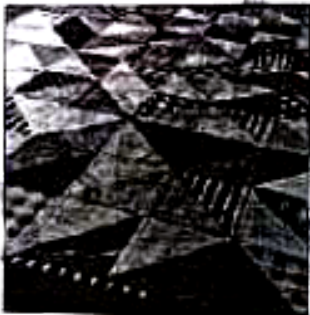
D. 4 : 1

**Answer:**



**Watch Video Solution**

**Case Study - II**



**Diagrammatic View**

9.

Quilts are available in various colours and design ,

Geometric design includes shapes like squares , triangles , rectangles , hexagons etc.

One such design is shown above. Two triangles are highlighted  $\triangle ABC$  and  $\triangle PQR$

Based on above information , answer the following questions :

ar (PQR) : ar (ABC) is equal to

A. 2 : 1

B. 1 : 4

C. 4 : 1

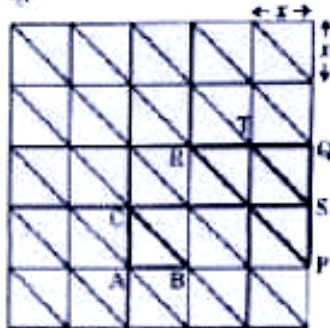
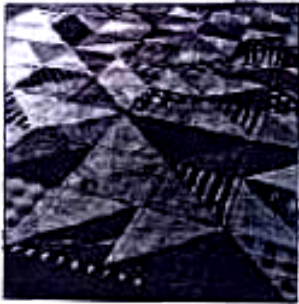
D. 1 : 8

**Answer:**





Case Study - II



Diagrammatic View

10.

Quilts are available in various colours and design , Geometric design includes shapes like squares , triangles , rectangles , hexagons etc.

One such design is shown above. Two triangles are highlighted  $\triangle ABC$  and  $\triangle PQR$

Based on above information , answer the following questions :

Which of the following is not true ?

A.  $\Delta TQS \sim \Delta PQR$

B.  $\Delta CBA \sim \Delta STQ$

C.  $\Delta BAC \sim \Delta PQR$

D.  $\Delta PQR \sim \Delta ABC$

**Answer:**



**Watch Video Solution**