

Second Term Exam - 2019-20

Maths Answer key 7.

Mark 2

1. (a) $AB : AC = 2 : 3$

(b) $QR = 6 \text{ cm}$

2. $PR = 2$

$QR = 4$

3. $P(x) = 5x^3 - 7x^2 + 8x + 100$

$P(0) = 100$

$P(1) = 5 - 7 + 8 + 100$

$P(1) = \underline{\underline{106}}$

4. $r = \frac{10}{2} = 5$

$$\begin{aligned} \text{Area} &= \pi r^2 \\ &= \pi 5^2 \\ &= \underline{\underline{25\pi}} \end{aligned}$$

Mark 3

5 (a) 100 cm^2

(b) (i) $\triangle APM, \triangle BMQ$

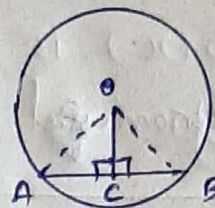
(ii) $\triangle PQA, \triangle PQB$

6. (a) $\frac{1}{10}, \frac{11}{100}, \frac{111}{1000}$

(b) $\sqrt{.1111\dots} = \sqrt{\frac{1}{9}} = \frac{1}{3} \parallel$
 $= .3333 \parallel$

(a) $BC = 3$

(b)



Considers $\triangle ACO, \triangle BCO$

$OA = OB$ (radius)

$OC = OC$ (common side)

$\angle ACO = \angle BCO = 90$

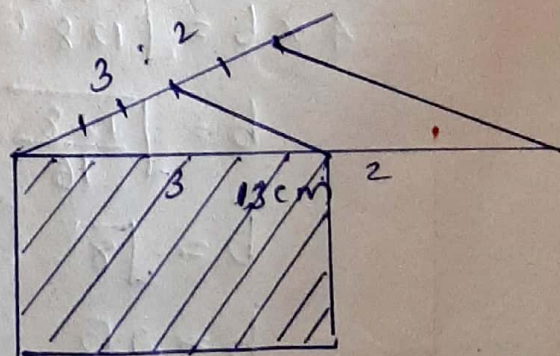
$\therefore \triangle ACO \cong \triangle BCO$

$\therefore AC = BC$

Hence the proof

8. (a) $6 : 4 = \underline{\underline{3 : 2}}$

(b)



9. (a) $AB : PQ = 2 : 3$

(b) $4 : 9$

(c) 54

10 (a) $b(x) = 10 - x$

(b) $P(x) = \frac{24}{x}$

(c) $b(x)$ is a polynomial

11. (a) $\angle AOC = 120^\circ$

(b) $2 \times 20\pi = \underline{40\pi \text{ cm}}$

(c) $6 \times 20\pi = \underline{120\pi \text{ cm}}$

Mark 4

12 (a) $\sqrt{12} \times \sqrt{3} = \sqrt{36} = \underline{6}$
 $\sqrt{12} \times \frac{1}{\sqrt{3}} = \sqrt{4} = \underline{2}$

(b) Area = $\sqrt{128}$

$l \times b = \sqrt{128}$

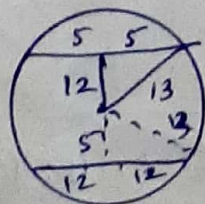
$4 \times b = \sqrt{128}$

$b = \sqrt{\frac{128}{16}}$

$b = \sqrt{8}$

$b = \underline{2\sqrt{2}}$

13 (a) 12



(b) $12 - 5 = \underline{7}$

14 (a) $AB = 10 \text{ cm}$

$PO = 5 \text{ cm}$

$XY = 5 \text{ cm}$

(b) $AX = XM$ (given) ①

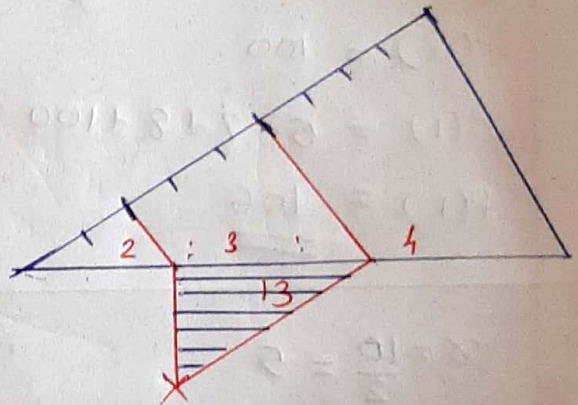
$PQXY$ is a parallelogram

\therefore diagonals are bisect each other $\therefore XM = XQ$ ②

From ① & ②

$AX = XM - MQ$

15



16

$P(1) = a + b = 1$ ①

$P(2) = 2a + b = 3$ ②

$a = \underline{2}$

$2 + b = 1$

$b = \underline{-1}$

$P(x) = 2x - 1$

17

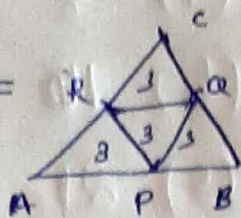
(a) $r = 4$

(b) $2\pi r = 2\pi \cdot 4 = \underline{8\pi}$

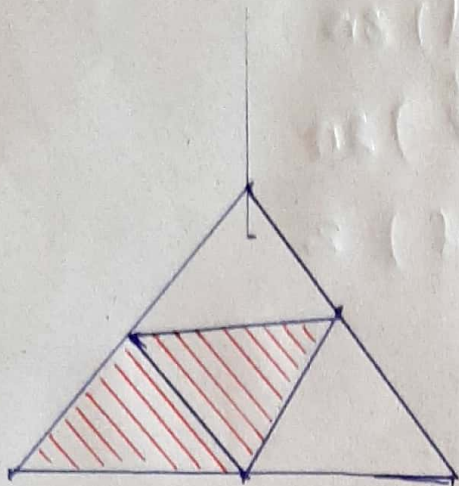
(c) Construction

18

$$(a) \quad 3+3 = \underline{\underline{6}}$$



(b)



21

$$(a) \quad 180$$

$$(b) \quad \frac{1}{2} \pi r^2 = \frac{1}{2} \pi 4^2$$

$$= \frac{1}{2} \pi 16$$

$$= \underline{\underline{8\pi \text{ cm}^2}}$$

$$(c) \quad \underline{\underline{4:9:16}}$$

Mark 5

22

$$x + y = 23 \quad \text{--- (1)}$$

$$4x + 3y = 81 \quad \text{--- (2)}$$

$$\textcircled{1} \times 3 \Rightarrow 3x + 3y = 69$$

$$x = 12$$

$$y = 11$$

$$(b) \quad \text{Cas} = 12$$

$$\text{Auto} = 11$$

19

$$(a) \quad \angle APO = 90^\circ$$

$$(b) \quad \angle C = x \quad \angle AOP = x$$

$$\angle A = 90 - x \quad \angle COQ = 90 - x$$

$$\angle APO = \angle COQ = 90^\circ$$

$$\therefore \triangle APO \sim \triangle COQ$$

20

$$(a) \quad a(25) = 25(25 - n)$$

$$= \underline{\underline{25 \cdot 25 - 25n}}$$

$$(b) \quad a(10) = 10(15)$$

$$= \underline{\underline{150}}$$

$$a(15) = 15(10)$$

$$= \underline{\underline{150}}$$

$$(c) \quad k = 18 \quad (7+18=25)$$

23



$$r \approx \underline{\underline{2.9}}$$

24

$$(a) \quad PQ = 5$$

$$(b) \quad SR \parallel AC \quad (\text{From } \triangle AQR)$$

$$PQ \parallel AC \quad (\text{From } \triangle PQR)$$

$\therefore PQRS$ is parallelogram

$$(c) \quad \text{Rhombus}$$

$$25 \text{ (a) } AP : AB = 6 : 8 \\ = 3 : 4$$

(b) Construction

$$26. \text{ (a) } P(x) = 4x$$

$$\text{(b) } 4x + 8$$

$$\text{(c) } 12 \text{ cm}$$

$$27 \text{ (a) } \frac{180}{360} \times 2\pi \times 2 = \underline{\underline{2\pi}}$$

$$\text{(b) } \frac{180}{360} \times 2\pi r$$

$$= \frac{1}{2} \times 7\pi$$

$$= \underline{\underline{3.5\pi}}$$

$$\text{(c) } 2\pi + \pi + \frac{1}{2}\pi + \frac{7}{2}\pi$$

$$= 3\pi + 4\pi$$

$$= \underline{\underline{7\pi}}$$

$$28. \text{ (a) } \angle ACD = 40$$

$$\text{(b) } \angle A = \angle DCB = x$$

$$\angle ACD = \angle B = 90 - x$$

$$\angle ADC = \angle BDC = 90$$

$$\text{(c) } \frac{b}{b} = \frac{a}{b} \quad [\text{From (b)}]$$

$$\underline{\underline{b^2 = ab}}$$

$$29 \text{ (a) } 8$$

$$\text{(b) } 10$$

$$\text{(c) } 21$$

$$\text{(d) } 3n$$

$$\text{(e) } 2n$$

$$\text{(f) } 2$$

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