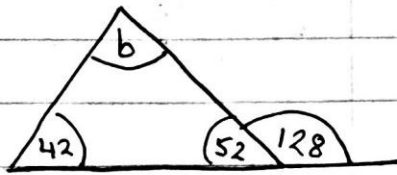


Revision Sheet Solutions

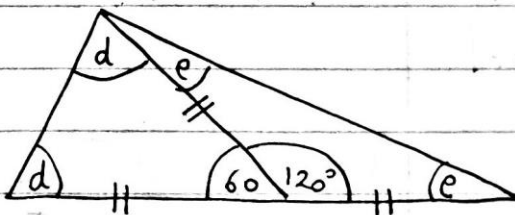
Q1. a)



$$b = 180 - 42 - 52$$

$$= \boxed{86^\circ}$$

c)

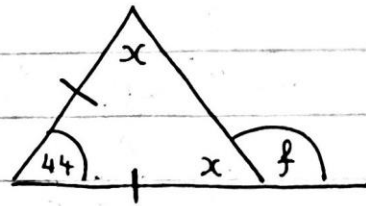


$$-60 + 2d = 180 \quad 120 + 2e = 180$$

$$2d = 120 \quad 2e = 60$$

$$\boxed{d = 60^\circ} \quad \boxed{e = 30^\circ}$$

b)



Triangle is isosceles \Rightarrow 2 equal angles

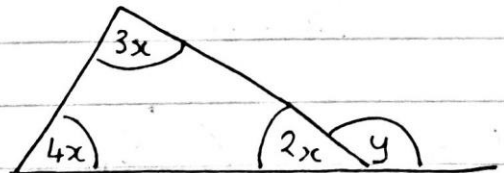
$$44 + 2x = 180$$

$$2x = 136$$

$$x = 68^\circ$$

$$\Rightarrow f = 180 - 68 = \boxed{112^\circ}$$

d)



$$3x + 4x + 2x = 180$$

$$9x = 180$$

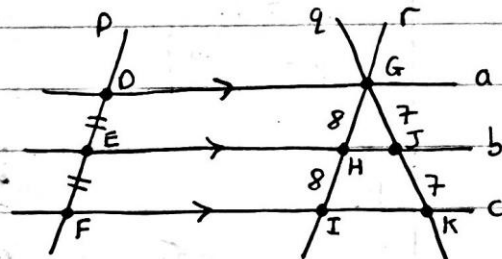
$$\boxed{x = 20^\circ}$$

$$2x + y = 180$$

$$40 + y = 180$$

$$\boxed{y = 140^\circ}$$

Q2. a)

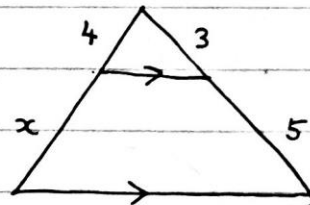


i) $|HI| = \boxed{8\text{cm}}$

ii) $|GJ| = \boxed{7\text{cm}}$

Transversal
Theorem

b)



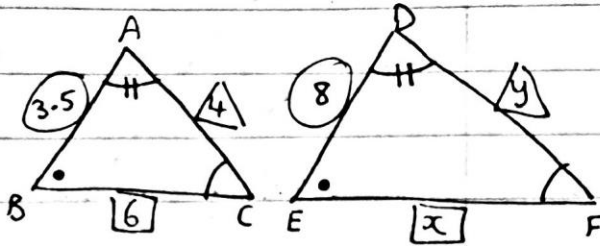
$$\frac{4}{x} = \frac{3}{5}$$

$$\Rightarrow 3x = 20$$

$$\Rightarrow \boxed{x = 6.7}$$

Line \parallel to 1 side
cuts other 2 sides
in same ratio.

Q3. a)



i) Two triangles have equal angles.

ii) $[DF]$

$$\text{iii) } \frac{3.5}{8} = \frac{6}{x} \quad \frac{3.5}{8} = \frac{4}{y}$$

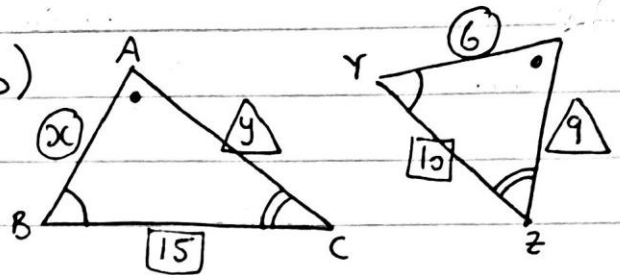
$$3.5x = 48$$

$$x = 13.7$$

$$3.5y = 32$$

$$y = 9.14$$

b)



i) $[XY]$

$$\text{ii) } \frac{x}{6} = \frac{15}{10} \quad \frac{15}{10} = \frac{y}{9}$$

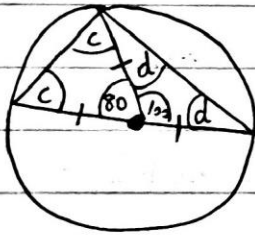
$$10x = 90$$

$$x = 9$$

$$10y = 135$$

$$y = 13.5$$

Q4. a)



$$80 + 2c = 180 \quad 100 + 2d = 180$$

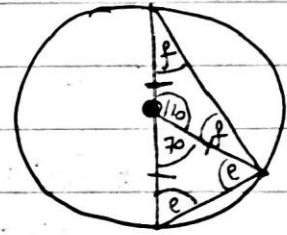
$$2c = 100$$

$$c = 50^\circ$$

$$2d = 80$$

$$d = 40^\circ$$

b)



$$70 + 2e = 180$$

$$2e = 110$$

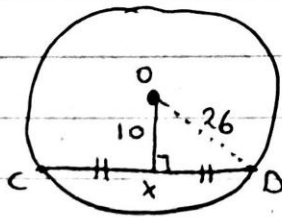
$$e = 55^\circ$$

$$110 + 2f = 180$$

$$2f = 70$$

$$f = 35^\circ$$

Q5. a)



Using ΔOXD :

$$26^2 = 10^2 + |xO|^2$$

$$676 - 100 = |xO|^2$$

$$576 = |xO|^2$$

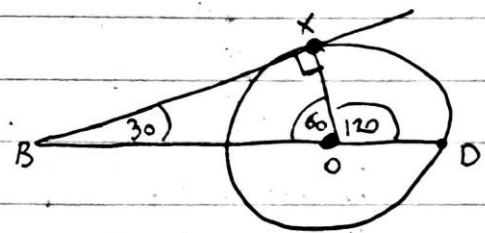
$$\Rightarrow |xO| = \sqrt{576}$$

$$= 24$$

$$\Rightarrow |CD| = 24 \times 2$$

$$= 48 \text{ cm}$$

b)



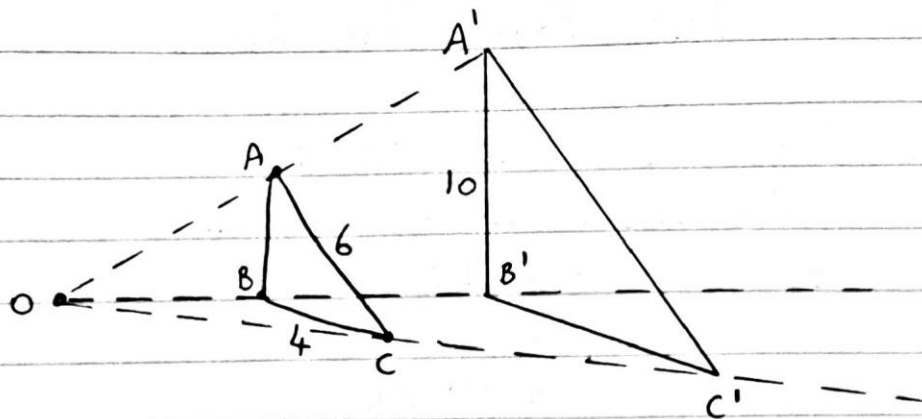
BX is a tangent

\Rightarrow Angle $\angle OXB$ is a right angle i.e. 90°

$$\Rightarrow \angle OXB = 180 - 90 - 60$$

$$= 30^\circ$$

Q6.



- i) Scale factor = $k = 2$
 \Rightarrow Side lengths of $A'B'C'$ are twice as big as ABC

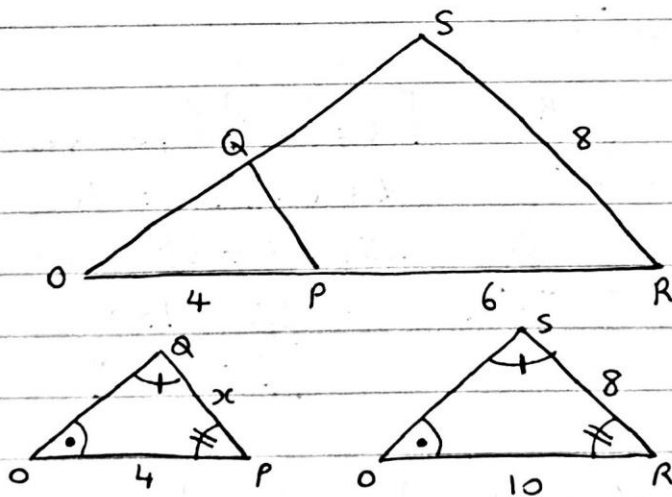
$$\Rightarrow |B'C'| = 2 \times |BC| = 2 \times 4 = \boxed{8\text{cm}}$$

$$\text{ii) } |A'C'| = 2 \times |AC| = 2 \times 6 = \boxed{12\text{cm}}$$

$$\text{iii) } |A'B'| = 2 \times |AB|$$

$$\Rightarrow |AB| = \frac{1}{2} |A'B'| = \frac{1}{2} (10) = \boxed{5\text{cm}}$$

Q7.



- i) $|OP|$ and $|OR|$ are corresponding sides of similar Δs
 $\Rightarrow \frac{|OQ|}{4} = \boxed{2.5} = \text{Scale factor}$

$$\text{ii) } |PQ| = \frac{|SR|}{2.5} = \frac{8}{2.5} = \boxed{3.2}$$

$$\text{iii) } \text{Scale factor} = 2.5 \Rightarrow 1:2.5 \text{ or } \boxed{2:5}$$

$$\text{iv) } \text{Area } \Delta OSR = k^2 \times \text{Area } \Delta OPQ = (2.5)^2 \times 4 = \boxed{25 \text{ sq units}}$$

Past Exam Questions

Q8.

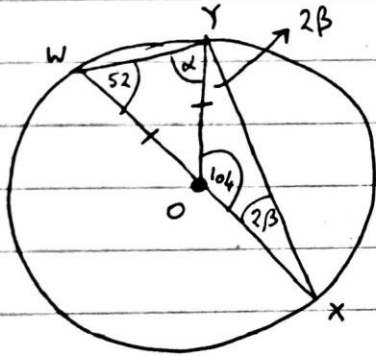
$$\begin{aligned} \text{Area Large Disc} &= \pi(3)^2 = 9\pi \\ \text{Area Smaller Disc} &= \pi(2.5)^2 = 6.25\pi \\ \Rightarrow \text{Area Crescent} &= 9\pi - 6.25\pi \\ &= 2.75\pi \\ &= \boxed{8.64 \text{ cm}^2} \end{aligned}$$

$$\text{Perimeter of Large Disc} = 2\pi(3) = 6\pi$$

$$\text{Perimeter of Small Disc} = 2\pi(2.5) = 5\pi$$

$$\Rightarrow \text{Perimeter of Crescent} = 6\pi + 5\pi = 11\pi = \boxed{34.56 \text{ cm}}$$

Q9.



Using $\triangle OWY$:

\triangle is isosceles

$$\Rightarrow \alpha = 52^\circ$$

$$\Rightarrow |kWOY| = 76^\circ$$

Using $\triangle OXY$:

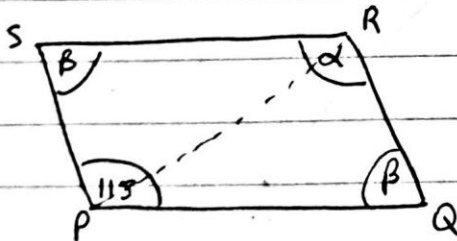
$$104 + 2\beta + 2\beta = 180$$

$$4\beta = 76$$

$$\beta = \boxed{19^\circ}$$

Q10.

i)



$\alpha = 115^\circ$ (Opp angles of a \square are equal)

$$\alpha + \alpha + \beta + \beta = 360$$

$$115 + 115 + 2\beta = 360$$

$$2\beta = 130$$

$$\beta = \boxed{65^\circ}$$

ii) $|QR| = |PS|$ (Opp Sides of a \square)

$|PQ| = |RS|$ (" " " " " ")

$|kRQP| = |kPSR|$ (Opp Angles of a \square)

$\Rightarrow \triangle PQR \equiv \triangle RSP$ (SAS)

Q11. * 2 sides of a Δ must be together greater than the third side

Triangle 1

$$3 \cdot 2 + 2 \cdot 9 > 5 \cdot 4 \quad \checkmark$$

$$2 \cdot 9 + 5 \cdot 4 > 3 \cdot 2 \quad \checkmark$$

$$3 \cdot 2 + 5 \cdot 4 > 2 \cdot 9 \quad \checkmark$$

Triangle 2

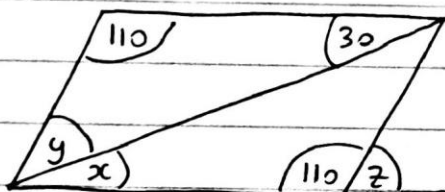
$$6 + 7 > 15 \quad \times$$

$$7 + 15 > 6 \quad \checkmark$$

$$6 + 15 > 7 \quad \checkmark$$

\Rightarrow Triangle 2 can't be constructed as it has 2 sides that, when added together, are smaller than the third side.

Q12. a)



$$\boxed{x = 30^\circ} \text{ (Alternate Angles)}$$

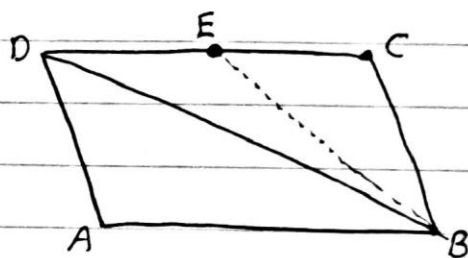
$$y = 180 - 110 - 30$$

$$\Rightarrow \boxed{y = 40^\circ} \text{ (3 angles in a } \Delta \text{)}$$

$$z = 180 - 110$$

$$\Rightarrow \boxed{z = 70^\circ} \text{ (straight angle)}$$

b)



i) Diagonal bisects area of a \square

$$\Rightarrow \text{Area } \Delta ABD = \frac{1}{2}(480) = \boxed{240}$$

ii) As E is midpoint of [CD]

$$\text{Area } \Delta DEB = \text{Area } \Delta ECB$$

$$\Rightarrow \text{Area } \Delta ECB = \frac{1}{2}(240) = \boxed{120}$$