IX - Test 03

Anskey

Q-1 b)

Q-2 d)

Q-3 b)

Q-4 b)

Q-5 c)

Q-6 b)

Q-7 d)

Q-8 c)

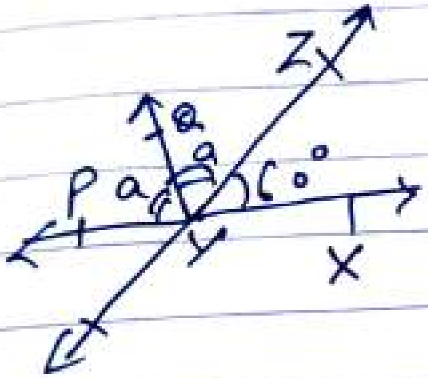
Q-9 d)

Q-10 a)

11(A) $\angle x = 40^\circ$

$\angle y = 78^\circ$

OR(B)



$60 + a + a = 180^\circ$

$2a = 120$

$a = 60$

$\angle XYQ = 60 + 60 = 120$

ref $\angle QYP = 360 - \angle QYP$

$= 360 - 60$

$= 300^\circ.$

12. $2(2y + 2y + 5y) = 360$ Complete angle prop

$18y = 360^\circ$

$y = \frac{360}{18} = 20^\circ$

$y = 20^\circ$

13 A

$$3x+5x+7x=300$$

$$x=\frac{300}{15}=20$$

Sides are 60, 100, 140

$$S=300/2=150$$

$$A=\sqrt{150(150-60)(150-100)(150-140)}$$

$$=\sqrt{15\times10\times90\times50\times10}$$

$$=\sqrt{15\times3\times3\times10\times5\times10\times10\times10}$$

$$=\sqrt{5\times3\times3\times3\times5\times10\times10\times10\times10}$$

$$=10\times10\times5\times3\sqrt{3}$$

$$=1500\sqrt{3}\text{ sq. unit.}$$

B)

$$S=24/2=12$$

$$A=\sqrt{12(12-6)(12-8)(12-10)}$$

$$=\sqrt{6\times2\times6\times2\times2\times2}$$

$$=6\times2\times2=24\text{ sq unit}$$

$$\text{Cost}=24\times10=\text{Rs }240$$

14 (A) Smallest $= x$

Second side $= x+4$

third side $= 2x-6$

$$x+x+4+2x-6=50$$

$$4x=52$$

$$x=13$$

Sides are 13, 17, 20 $\quad S=25$

$$\text{Area} = \sqrt{25(25-13)(25-17)(25-20)}$$

$$= \sqrt{25 \times 12 \times 8 \times 5}$$

$$= \sqrt{5\times5\times3\times2\times2\times2\times2\times2\times5}$$

$$= 5\times2\times2\sqrt{3\times5\times2}$$

$$= 20\sqrt{30} \text{ sq. unit}$$

(B) $S = \dfrac{91+98+105}{2} = \dfrac{294}{2}$

$$= 147$$

$$A = \sqrt{147\times56\times49\times42}$$

$$= \sqrt{7\times7\times3\times7\times8\times7\times7\times6\times7}$$

$$= 7\times7\times7\sqrt{3\times2\times2\times2\times2\times2\times3}$$

$$= 7\times7\times7\times2\times2\times3 = 4116 \, m^2$$

$$\text{Area} = \frac{1}{2} \times B \times h$$

$$4116 = \frac{1}{2} \times 105 \times h$$

$$\frac{4116 \times 2}{105} = h$$

$$78.4\,m = h.$$

15. $(z+55) + 90^\circ = 180^\circ$ (Co-interior angle $\because AB \parallel EF$)

$z = 180 - 145$

$= 35^\circ$

$y + 55^\circ = 180^\circ$ (Co-int angle)

$y = 125^\circ$ $\because CD \parallel EF$

$x = y = 125^\circ$ corresponding angles.

Section D

(i) $S = \frac{26+17+25}{2}$

$= \frac{68}{2} = 34$ cm

(ii) $A = \sqrt{34(34-26)(34-17)(34-25)}$

$= \sqrt{2 \times 17 \times 2 \times 2 \times 2 \times 17 \times 3 \times 3}$

$= 17 \times 3 \times 2 \times 2$

$= 17 \times 12$

$= 204$ cm^2

(iii)(a) Area of rectangle ~~8~~ Area of one til

$= 70 \times 50 - 8 \times 204$

$= 3500 - 1632$

$= 1868$ cm^2

(b) $8 \times 25 \times 204$

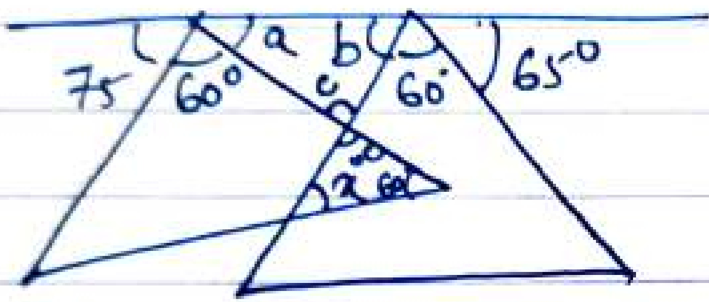
$=$ Rs 40800

17. (i) 60° (corresponding angle)

(ii)

$a+60+75=180$

$a=180-135=45$



$b+60+65=180$

$b=180-125$

$=55^\circ$

$a+b+c=180^\circ$ (Sum of all angles of Δ)

$c=180-45-55$

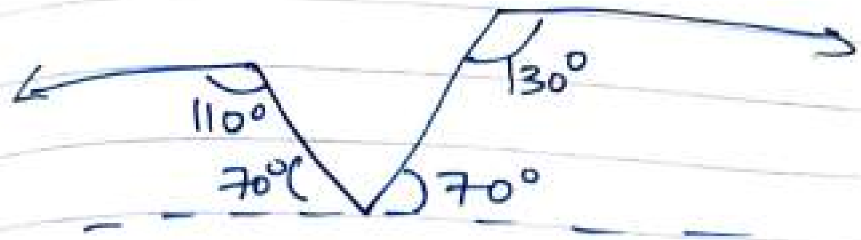
$c=80^\circ$

$\therefore x+60+c=180^\circ$

$x=180-60-80^\circ$

$=40^\circ$

(iii)

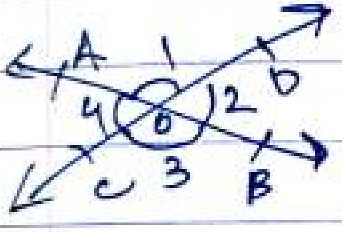


$\angle PQR = 180 - 140$
$= 40°$

18 (a)

Let AOB & COD are two intersecting lines, intersect at O

To prove: $\angle 1 = \angle 3$, $\angle 2 = \angle 4$



proof: $\angle 1 + \angle 2 = 180°$
$\angle 1 + \angle 4 = 180$ } linear pair

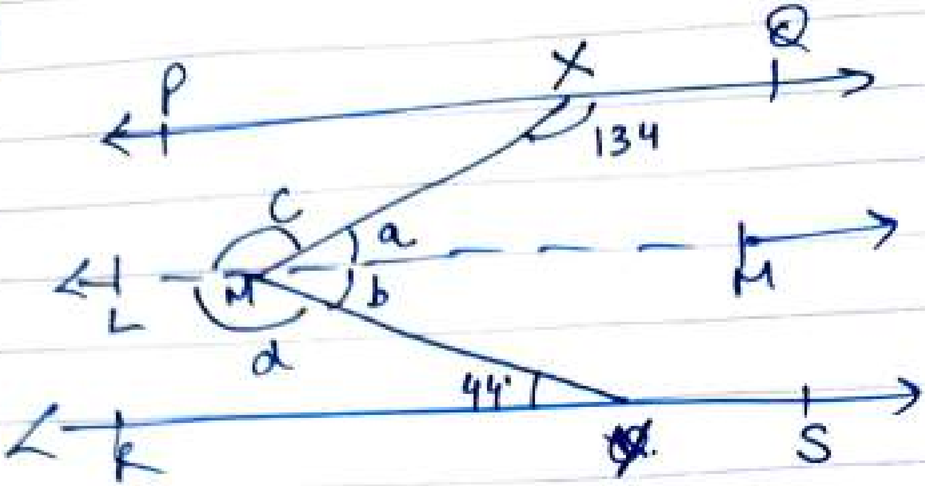
$\cancel{\angle 1} + \angle 2 = \cancel{\angle 1} + \angle 4$
$\angle 2 = \angle 4$

Also $\angle 1 + \angle 4 = 180°$
$\angle 4 + \angle 3 = 180°$ } linear pair

$\angle 1 + \cancel{\angle 4} = \cancel{\angle 4} + \angle 3$
$\angle 1 = \angle 3$

Hence Proved.

b)



Const: LM ∥ PQ ∥ RS.

$a + 134 = 180°$ (Co-int angle) as PQ ∥ LM

$a = 180 - 134$

$= 46°$

Also

$b = 44°$ (alt angle) as LM ∥ RS

$x = a + b = 44 + 46 = 90°$

$y =$ reflex $x = 360 - \angle x$

$= 360 - 90$

$= 270°$

19 (a) $\angle POS = 2a$

As $\angle POS + \angle SOQ = 180^\circ$ linear pair

$\angle SOQ = 180 - 2a$

Now $\angle ROT = \angle ROS + \angle SOT$

$= \frac{\angle POS}{2} + \frac{\angle SOQ}{2}$

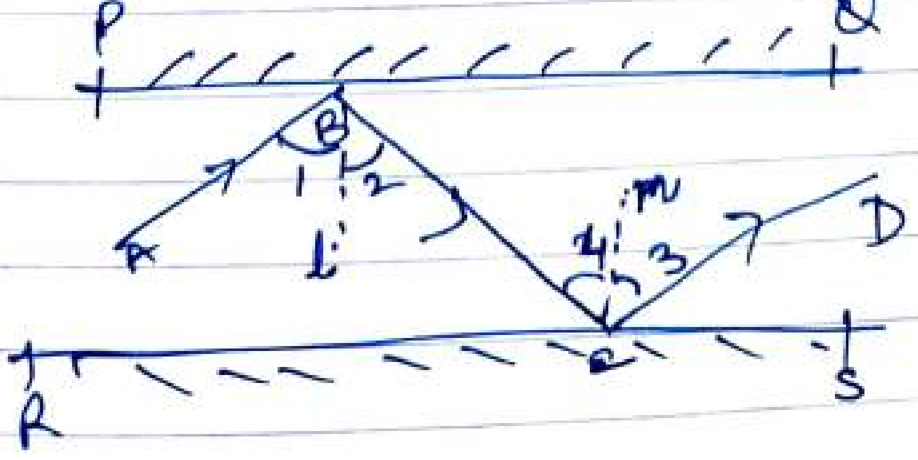
($\because$ OR & OT are bisector of $\angle POS$ & $\angle SOQ$ resp)

$= \frac{2a}{2} + \frac{180-2a}{2}$

$= \frac{\cancel{2a} + 180 - \cancel{2a}}{2}$

$= \frac{180}{2} = 90^\circ$

(b)



Given PQ || RS
Const: $BL \perp PQ$ $CM \perp RS$

proof. We know that by law of reflection

$\angle 1 = \angle 2$ angle of incidence = angle of ref.
$\angle 2 = \angle 3$

Also as PQ || RS
$\Rightarrow \angle PBC = BCS$ alt. angle
$\cancel{90} + \angle 2 = \cancel{90} + \angle 4$

$\angle 2 = \angle 4$
$2\angle 2 = 2\angle 4$

$\angle ABC = \angle BCD$

as alt. angles are equal

$\Rightarrow AB \parallel CD$.

Hence prov.