## EXERCISE 2(II)

1. Find the perpendicular, base and the hypotenuse of the following right angled triangles with reference to the angle $\theta$

i)



ii)



iii)



iv)



v)

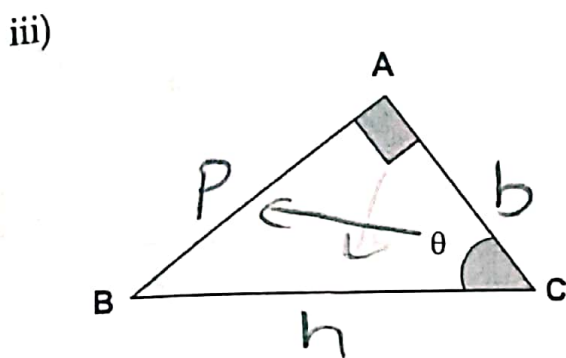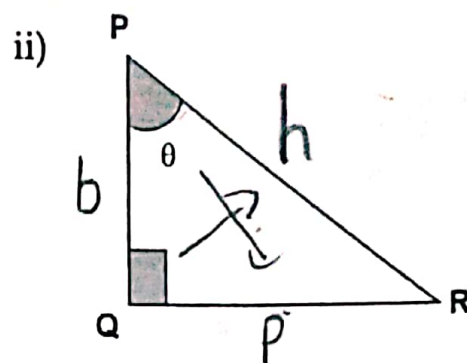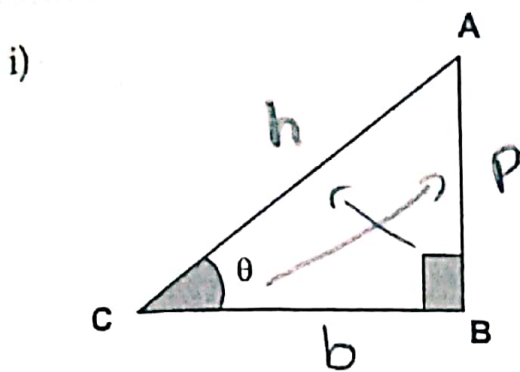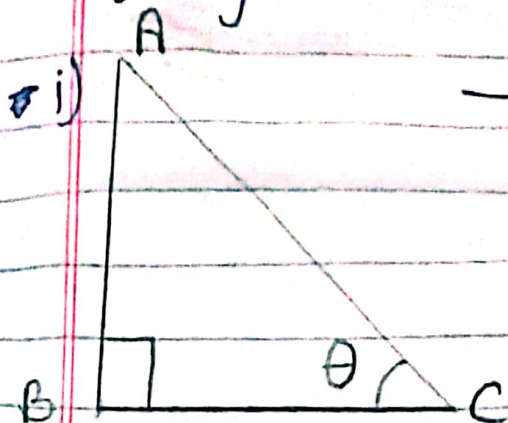

vi)
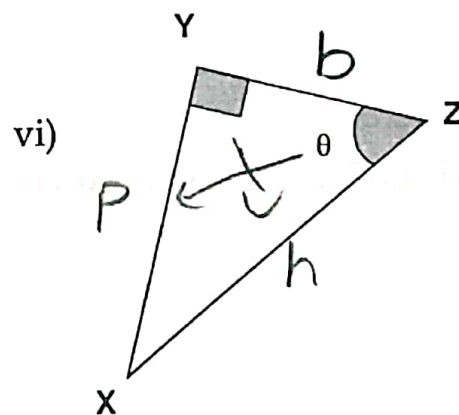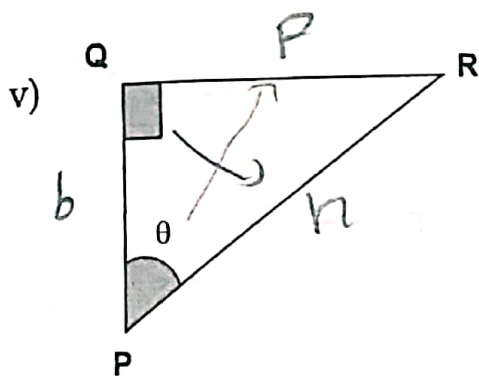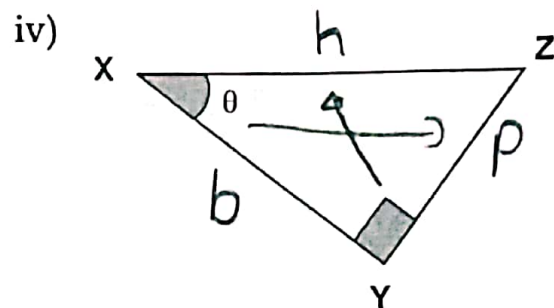
2. Find all th trigonometrical ratios of an angle from the following right angled triangle with reference to the angle θ.

i)



→ Soln Here,
From the given figure,
$$h = AC$$
$$p = AB$$
$$b = BC$$

Now,
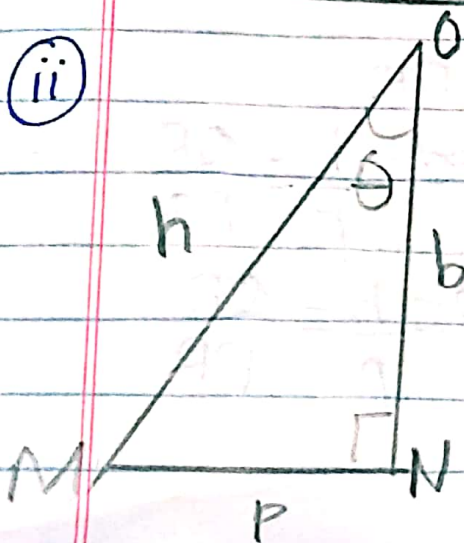
$$\sin\theta = \frac{p}{h} = \frac{AB}{AC}$$

$$\cos\theta = \frac{b}{h} = \frac{BC}{AC}$$

$$\tan\theta = \frac{p}{b} = \frac{AB}{BC}$$

$$\csc\theta = \frac{h}{p} = \frac{AC}{AB}$$

$$\sec\theta = \frac{h}{b} = \frac{AC}{BC}$$

$$\cot\theta = \frac{b}{p} = \frac{BC}{AB}$$

ii)



→ Soln Here,
From the given figure,
$$h = \cancel{MO}\ OM$$
$$p = MN$$
$$b = ON$$

Now, $\sin\theta = \dfrac{p}{h} = \dfrac{MN}{OM}$
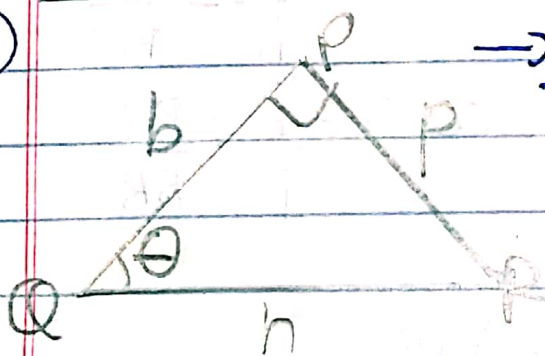
$\cos\theta = \dfrac{b}{h} = \dfrac{ON}{OM}$

$\tan\theta = \dfrac{p}{b} = \dfrac{MN}{ON}$

$\text{cosec}\theta = \dfrac{h}{p} = \dfrac{OM}{MN}$

$\sec\theta = \dfrac{h}{b} = \dfrac{OM}{ON}$

$\cot\theta = \dfrac{b}{p} = \dfrac{ON}{MN}$

(iii)



→ Soln Here,
From the given figure,

$h = QR$

$p = PQ$

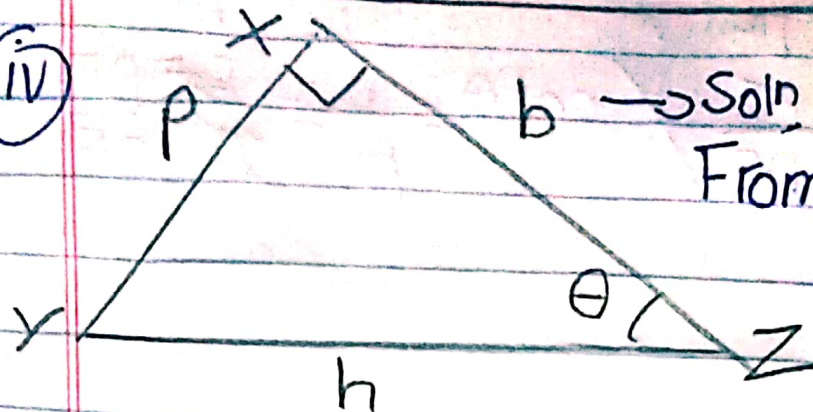$b = PR$

Now, $\sin\theta = \dfrac{p}{h} = \dfrac{PQ}{QR}$  /  $\text{cosec}\theta = \dfrac{h}{p} = \dfrac{QR}{PQ}$

$\cos\theta = \dfrac{b}{h} = \dfrac{PR}{QR}$  /  $\sec\theta = \dfrac{h}{p} = \dfrac{QR}{PR}$

$$\tan\theta = \frac{p}{b} = \frac{PQ}{PR} \quad / \quad \cot\theta = \frac{b}{p} = \frac{PR}{PQ}$$

(iv)

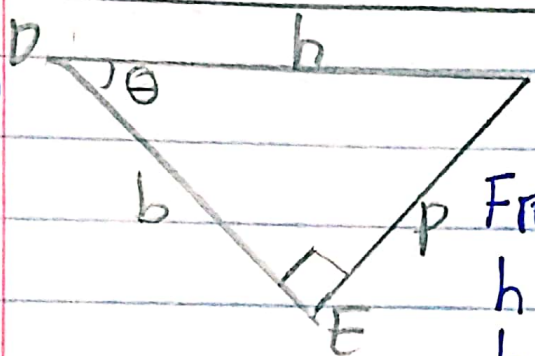→ Soln Here,
From the given figure,
$$h = YZ$$
$$b = ZX \, XZ$$
$$p = XY$$

Now, $\sin\theta = \frac{p}{h} = \frac{XY}{YZ}$ / $\operatorname{cosec}\theta = \frac{h}{p} = \frac{YZ}{XY}$

$\cos\theta = \frac{b}{h} = \frac{XZ}{YZ}$ / $\sec\theta = \frac{h}{b} = \frac{YZ}{XZ}$

$\tan\theta = \frac{p}{b} = \frac{XY}{XZ}$ / $\cot\theta = \frac{b}{p} = \frac{XZ}{XY}$

(v)

→ Soln, Here,
From the given figure,
$$h = DF$$
$$b = DE$$
$$p = EF$$

Now,

$$\sin\theta = \frac{p}{h} = \frac{EF}{DF} \qquad \bigg/ \qquad \mathrm{cosec}\,\theta = \frac{h}{p} = \frac{DE}{EF}$$

$$\cos\theta = \frac{b}{h} = \frac{DE}{DF} \qquad \bigg/ \qquad \sec\theta = \frac{h}{b} = \frac{DE}{DE}$$

$$\tan\theta = \frac{p}{b} = \frac{EF}{DE} \qquad \bigg/ \qquad \cot\theta = \frac{b}{p} = \frac{DE}{EF}$$