

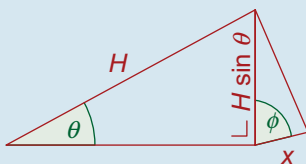
Exercise 1C

- Q. 1.** (i) $|AB| = H \cos \theta$; $|BC| = H \sin \theta$
 (ii) $|AB| = H \sin \theta$; $|BC| = H \cos \theta$
 (iii) $|AC| = H \cos \theta$; $|BC| = H \sin \theta$
 (iv) $|AC| = H \cos \theta$; $|AB| = H \sin \theta$

- Q. 2.** (i) $\cos A = \frac{12}{13}$, $\sin \theta = \frac{5}{13}$
 (ii) $\cos A = \frac{35}{37}$, $\sin \theta = \frac{12}{37}$
 (iii) $\sin A = \frac{\sqrt{7}}{4}$, $\tan A = \frac{\sqrt{7}}{3}$
 (iv) $\cos = \frac{40}{41}$

- Q. 3.** (i) $|AB| = 4\sqrt{3}$ cm; $|BC| = 4$ cm
 (ii) $|XY| = 2$ m; $|YZ| = 2$ m
 (iii) $|AB| = 10 \sin 40^\circ = 6.428$ m
 $|BC| = 10 \cos 40^\circ = 7.66$ m
 (iv) $|XY| = 20 \cos 35^\circ = 16.38$ cm
 $|XZ| = 20 \sin 35^\circ = 11.47$ cm
 (v) $|PQ| = 40 \cos 20^\circ = 37.59$ m
 $|QR| = 40 \sin 20^\circ = 13.68$ m
 (vi) $|PQ| = 12 \cos 60^\circ = 6$ m
 $|RQ| = 12 \sin 60^\circ = 6\sqrt{3}$ m
 (vii) $|AB| = 15 \cos \theta = 12$ cm
 $|BC| = 15 \sin \theta = 9$ cm
 (viii) $|RQ| = 78 \cos \alpha = 30$ m
 $|PQ| = 78 \sin \alpha = 72$ m
 (ix) $|XY| = \sqrt{13} \cos \theta = 3$
 $|YZ| = \sqrt{13} \sin \theta = 2$
 (x) $|AB| = \sqrt{20} \cos \alpha = 4$
 $|BC| = \sqrt{20} \sin \alpha = 2$

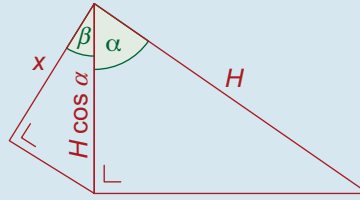
Q. 4.



$$x = ADJ = H \sin \theta \cos \phi$$

$$\therefore x = (13) \left(\frac{3}{5} \right) \left(\frac{5}{13} \right) = 3$$

Q. 5.



$$x = ADJ = H \cos \alpha \cos \beta$$

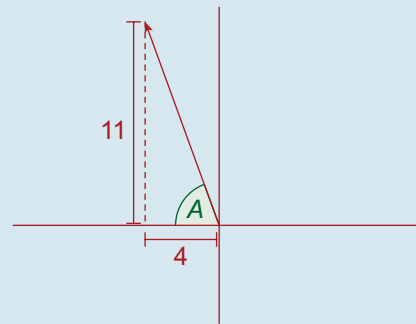
$$\therefore x = H \left(\frac{7}{\sqrt{50}} \right) \left(\frac{1}{\sqrt{2}} \right) = \frac{7}{10} H$$

$$\therefore H : x = 10 : 7$$

Exercise 1D

- Q. 1.** (i) $2 \cos 60^\circ \vec{i} + 2 \sin 60^\circ \vec{j} = \vec{i} + \sqrt{3} \vec{j}$
 (ii) $10 \cos 18^\circ \vec{i} + 10 \sin 18^\circ \vec{j}$
 $= 9.511 \vec{i} + 3.09 \vec{j}$
 (iii) $8 \cos 45^\circ \vec{i} - 8 \sin 45^\circ \vec{j}$
 $= 4\sqrt{2} \vec{i} - 4\sqrt{2} \vec{j}$
 (iv) $-20 \cos 20^\circ \vec{i} + 20 \sin 20^\circ \vec{j}$
 $= -18.794 \vec{i} + 6.84 \vec{j}$
 (v) $-\sqrt{50} \cos 45^\circ \vec{i} - \sqrt{50} \sin 45^\circ \vec{j}$
 $= -5 \vec{i} - 5 \vec{j}$
 (vi) $12 \cos 39^\circ \vec{i} - 12 \sin 39^\circ \vec{j}$
 $= 9.3252 \vec{i} - 7.5516 \vec{j}$

Q. 2.



$$\vec{u} = -10 \cos \alpha \vec{i} - 10 \sin \alpha \vec{j}$$

$$= -8 \vec{i} - 6 \vec{j}$$

$$\vec{v} = 13 \cos \beta \vec{i} - 13 \sin \beta \vec{j}$$

$$= 12 \vec{i} - 5 \vec{j}$$

$$\therefore \vec{u} + \vec{v} = 4 \vec{i} - 11 \vec{j}$$

$$\vec{w} = -(\vec{u} + \vec{v})$$

$$= -4 \vec{i} + 11 \vec{j}$$