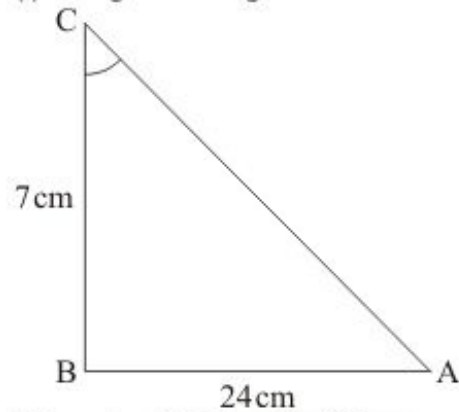




Trigonometric Ratios Ex 5.1 Q2

Answer :

(i) The given triangle is below:-



Given: In $\triangle ABC$, $AB = 24$ cm

$BC = 7$ cm

$\angle ABC = 90^\circ$

To Find: $\sin A, \cos A$

In this problem, Hypotenuse side is unknown

Hence we first find Hypotenuse side by Pythagoras theorem

By Pythagoras theorem,

We get,

$$AC^2 = AB^2 + BC^2$$

$$AC^2 = 24^2 + 7^2$$

$$AC^2 = 576 + 49$$

$$AC^2 = 625$$

$$AC = \sqrt{625}$$

$$AC = 25$$

$$\text{Hypotenuse} = 25$$

By definition,

$$\sin A = \frac{\text{Perpendicular side opposite to } \angle A}{\text{Hypotenuse}}$$

$$\sin A = \frac{BC}{AC}$$

$$\sin A = \frac{7}{25}$$

By definition,

$$\cos A = \frac{\text{Base side adjacent to } \angle A}{\text{Hypotenuse}}$$

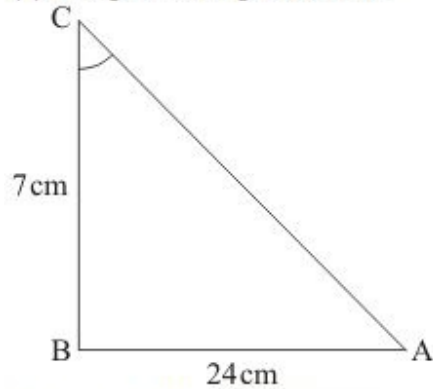
$$\cos A = \frac{AB}{AC}$$

$$\cos A = \frac{24}{25}$$

Answer:

$$\sin A = \frac{7}{25} \quad \cos A = \frac{24}{25}$$

(ii) The given triangle is below:



Given: In $\triangle ABC$, $AB = 24$ cm

$BC = 7$ cm

$\angle ABC = 90^\circ$

To Find: $\sin C, \cos C$

In this problem, Hypotenuse side is unknown

Hence we first find Hypotenuse side by Pythagoras theorem

By Pythagoras theorem,

We get,

$$AC^2 = AB^2 + BC^2$$

$$AC^2 = 24^2 + 7^2$$

$$AC^2 = 576 + 49$$

$$AC^2 = 625$$

$$AC = \sqrt{625}$$

$$AC = 25$$

Hypotenuse = 25

By definition,

$$\sin C = \frac{\text{Perpendicular side opposite to } \angle C}{\text{Hypotenuse}}$$

$$\sin C = \frac{AB}{AC}$$

$$\sin C = \frac{24}{25}$$

By definition,

$$\cos C = \frac{\text{Base side adjacent to } \angle C}{\text{Hypotenuse}}$$

$$\cos C = \frac{BC}{AC}$$

$$\cos C = \frac{7}{25}$$

Answer:

$$\sin C = \frac{24}{25} \quad \cos C = \frac{7}{25}$$

*****END*****