Chapter - 9

Some Applications of Trigonometry

(Assertion and Reasoning Questions)

In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

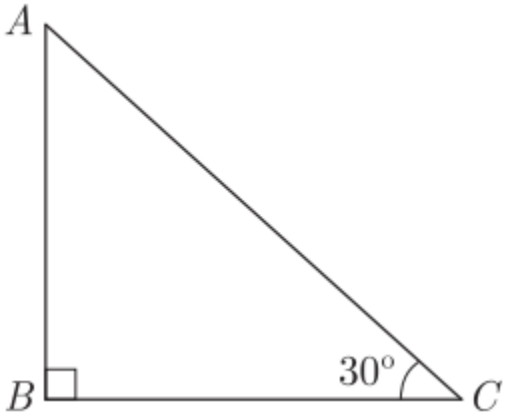
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(C) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

Q.1. Assertion (A) : In the figure, if BC = 20 m, then height AB is 11.56 m.



Reason : $\tan\theta = \frac{AB}{BC} = \frac{\text{perpendicular}}{\text{base}}$ where θ is the angle $\angle ACB$.

Q.2. Assertion (A) : If the length of shadow of a vertical pole is equal to its height, then the angle of elevation of the sun is 45^0

Reason (R) : According to pythagoras theorem, $h^2 = l^2 + b^2$, where h = hypotenuse, l = length and b = base.

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ANSWER KEY

Q.1 : (a)

Both the assertion and reason are correct, reason is the correct explanation of the assertion.

$$\tan 30^\circ = \frac{AB}{BC} = \frac{AB}{20}$$

$$AB = \frac{1}{\sqrt{3}} \times 20 = \frac{20}{1.73} = 11.56\,\text{m}$$

Q.2 : (b)

Both Assertion and Reason are correct, but Reason is not the correct explanation of the Assertion.