


# APPLICATION OF TRIGONOMETRY

*One can't just sit and fear Mathematics. One has to have some courage.*

*In fact courage is not the acknowledgement of our fears.*

*Rather it is the acknowledgement of something which is more important than our fears!*

By **O.P. GUPTA** Math Mentor  
INDIRA AWARD WINNER

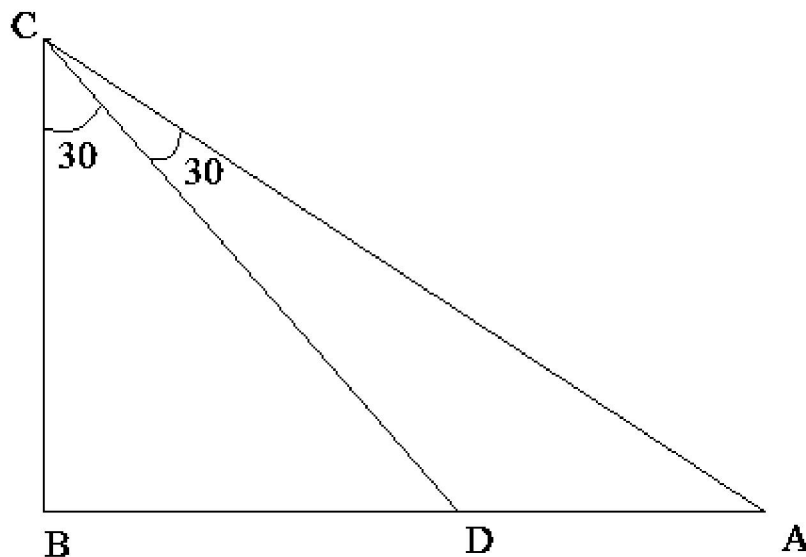
 For detailed solutions, check YouTube Channel.



[YouTube.com/MathematiciaByOPGupta](https://www.youtube.com/MathematiciaByOPGupta)

☆ Multiple Choice Questions, with **only** one correct option.

Q01. In given Fig.1, if  $BD = 1$  unit and  $DA = x$ , then  $x$  equals:



- (a) 1 unit                      (b) 2 units                      (c) 3 units                      (d) None of these
- Q02. The angle of elevation of the top of a tower from the points at a distance of 4 m and 9 m from the base of the land in the same straight line with it, are complementary. The height of the tower is:
- (a) 4 m                      (b) 7 m                      (c) 12 m                      (d) 6 m
- Q03. The angle of elevation of the top of a tower from two points at distances 'a' and 'b' from the base and on the same straight line with it are complimentary. The height of the tower is:
- (a)  $ab$                       (b)  $\sqrt{ab}$                       (c)  $(ab)^2$                       (d)  $\frac{a}{b}$
- Q04. In the Fig.2,  $\tan m = \frac{3}{4}$ . If  $AB = 12$  cm, then  $BC$  is:

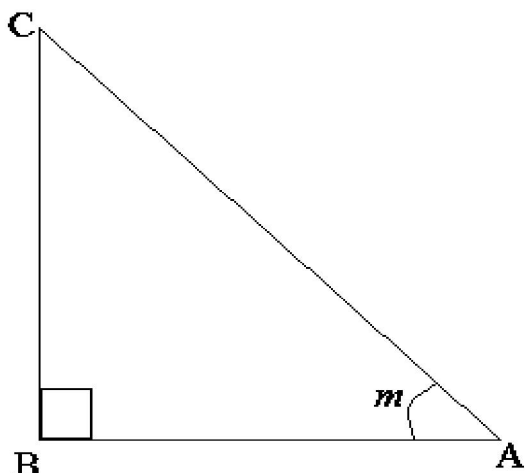


Fig.2

- (a) 8 cm                      (b) 12 cm                      (c) 10 cm                      (d) 9 cm

Q05. A tower stands vertically on the ground, from a point on the ground, which is 15 m away from the foot of the tower, the angle of elevation of the top of the tower is found to be  $60^\circ$ . The height of tower is:

- (a) 3 m                      (b)  $15\sqrt{3}$  m                      (c) 15 m                      (d)  $3\sqrt{15}$  m

Q06. An observer 1.5m tall is 28.5m away from chimney. The angle of elevation of the chimney from her eyes is  $45^\circ$ . The height of the chimney is:

- (a) 30 m                      (b) 27 m                      (c) 15 m                      (d) None of these

Q07. The shadow of a tree 6 m in its height is  $2\sqrt{3}$  m . The angle of elevation of the sun is:

- (a)  $60^\circ$                       (b)  $30^\circ$                       (c)  $85^\circ$                       (d)  $45^\circ$

Q08. A tower on the ground is in the vertical position. At a point on the ground 16 m away from the foot of the tower the angle of elevation of the tower is  $60^\circ$ . The height of the tower is:

- (a)  $6\sqrt{3}$  m                      (b)  $16\sqrt{3}$  m                      (c) 16 m                      (d) None of these

Q09. In the following figure [Fig.3], the perimeter of rectangle ABCD is:

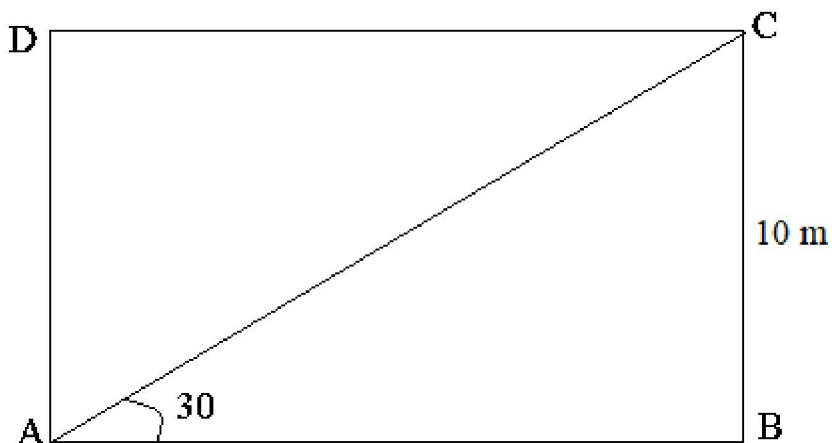


Fig.3

- (a) 40 m                      (b)  $10(\sqrt{3} + 1)$  m                      (c)  $20(\sqrt{3} + 1)$  m                      (d) 60 m

Q10. Two poles  $P_1$  and  $P_2$  stand 30m apart on the ground [See fig.4].  $M$  is a point on pole  $P_2$  such that the two ends of pole  $P_1$  subtend a right angle at the point  $M$  and the angle of elevation of the top of pole  $P_1$  from the point  $M$  is  $60^\circ$ . The height of pole  $P_1$ , in metres is:

- (a)  $20\sqrt{3}$                       (b)  $40\sqrt{3}$                       (c)  $60\sqrt{3}$                       (d)  $120\sqrt{3}$

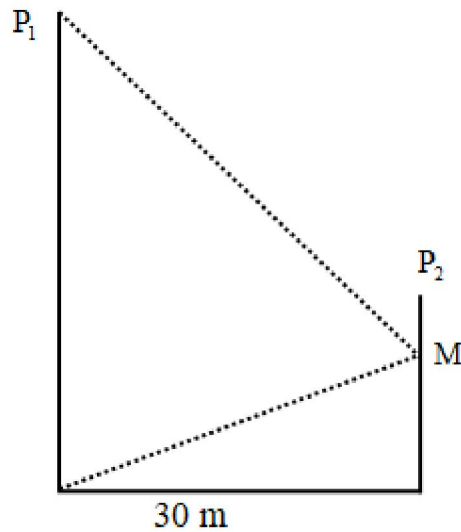


Fig.4

Q11. A boy on the top of a tower (having height 'h') is looking at a point  $P$  on the ground, making an angle of depression of  $45^\circ$ . This point  $P$  is at 15 m away from the foot of tower. Then 'h' equals:

- (a) 15 units                      (b) 15 m                      (c) 1.5 m                      (d) None of these

**ANSWERS KEY**

Q01. c      Q02. d      Q03. b      Q04. d      Q05. b      Q06. a      Q07. a  
Q08. b      Q09. c      Q10. c      Q11. b

# Dear math scholars,

We have taken utmost care while preparing this draft. Still chances of human error can't be ruled out. Please inform us about any Typing error / mistake in this document. This will help many future learners of Mathematics.

Email ID - **iMathematicia@gmail.com**  
WhatsApp @ +91 9650350480 (only message)

**O.P. GUPTA, Math Mentor**  
*[Maths (Hons.), E & C Engg., Indira Award Winner]*

Follow us on Twitter @theopgupta  
Follow us on Instagram @theopgupta  
Official Website : **www.theOPGupta.com**



**YouTube.com/MathematiciaByOPGupta**

---

■ Buy our Books, Test Papers and Sample Papers at **theopgupta.com**