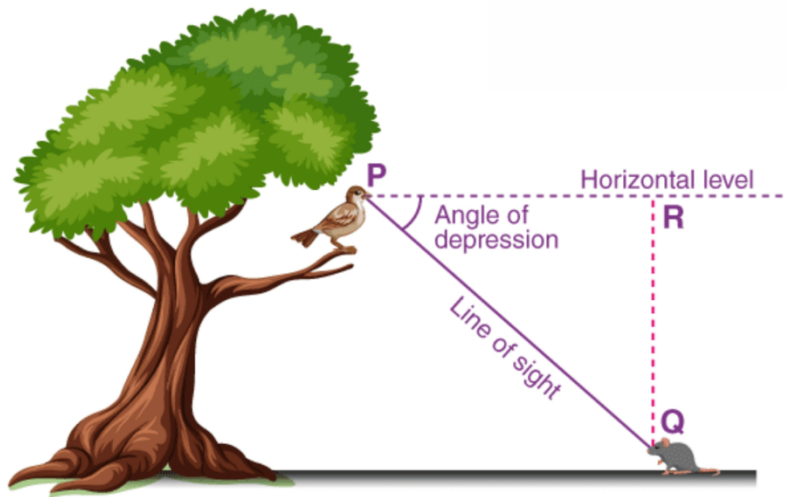




# MATHEMATICS - 10TH

## IMPORTANT MCQ'S - MATHS (10TH GRADE)



## APPLICATIONS TRIGONOMETRY



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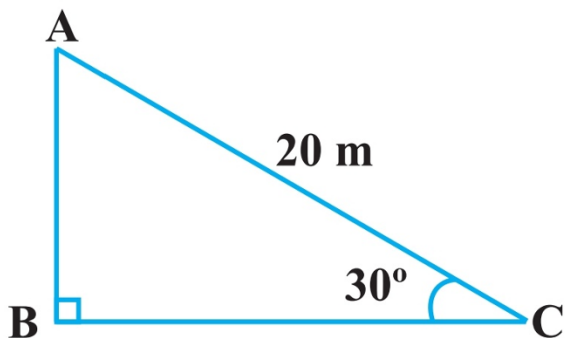
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Material Curated by  
Er. Sonal Agrawal Sir  
Ex. Scientist , BARC Mumbai



## 10th - Maths

SN		Marks
1	<p>An observer 1.5 m tall is 28.5 m away from a chimney. The angle of elevation of the top of the chimney from her eyes is <math>45^\circ</math>. What is the height of the chimney?</p> <p>( a ) 51.9m ( b ) 28.5m ( c ) 30m ( d ) NONE OF THESE</p>	2
2	 <p>A circus artist is climbing a 20 m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground. Find the height of the pole, if the angle made by the rope with the ground level is <math>30^\circ</math>.</p> <p>( a ) 5 m ( b ) 20 m ( c ) 15 m ( d ) 10 m</p>	1
3	<p>The angle of elevation of the top of a tower from a point on the ground, which is 30 m away from the foot of the tower, is <math>30^\circ</math>. Find the height of the tower.</p> <p>( a ) <math>\frac{10}{\sqrt{3}}</math> m ( b ) 10 m ( c ) <math>10\sqrt{3}</math> m ( d ) NONE OF THESE</p>	1
4	<p>Find the angle of elevation of the sun when the shadow of a pole h metres high is <math>\sqrt{3}</math> h metres long.</p> <p>( a ) <math>45^\circ</math> ( b ) <math>30^\circ</math> ( c ) <math>70^\circ</math> ( d ) <math>0^\circ</math></p>	2





5	<p>A ladder 15 metres long just reaches the top of a vertical wall. If the ladder makes an angle of <math>60^\circ</math> with the wall, find the height of the wall.</p> <p>(a) <math>\frac{2}{25}</math> m (b) <math>-\frac{7}{2}</math> m</p> <p>(c) <math>\frac{15}{2}</math> m (d) <math>-\frac{1}{2}</math> m</p>	1
6	<p>An observer 1.5 metres tall is 20.5 metres away from a tower 22 metres high. Determine the angle of elevation of the top of the tower from the eye of the observer.</p> <p>(a) <math>45^\circ</math> (b) <math>30^\circ</math></p> <p>(c) <math>70^\circ</math> (d) <math>90^\circ</math></p>	2
7	<p>The line drawn from the eye of an observer to the point in the object viewed by the observer , is known as ?</p> <p>(a) Line of sight (b) Angle of elevation</p> <p>(c) Angle of depression (d) NONE OF THESE</p>	1
8	<p>The angle formed by the line of sight with the horizontal when the point on the object which is being viewed is above the horizontal level , is known as ?</p> <p>(a) Line of sight (b) Angle of elevation</p> <p>(c) Angle of depression (d) NONE OF THESE</p>	1
9	<p>The angle formed by the line of sight with the horizontal when the point on the object which is being viewed is below the horizontal level, is known as ?</p> <p>(a) Line of sight (b) Angle of elevation</p> <p>(c) Angle of depression (d) NONE OF THESE</p>	1
10	<p>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 <math>60^\circ</math>. Find the height of the tower.</p> <p>(a) 15 m (b) <math>15\sqrt{3}</math> m</p> <p>(c) <math>\frac{15}{\sqrt{3}}</math> m (d) NONE OF THESE</p>	1
11		2





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## Mentors



**Er. Sonal Kumar Agrawal**

✍ B.E., M.Tech.  
✍ Ex BARC Scientist (Mumbai)

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**Er. Neha Agrawal**

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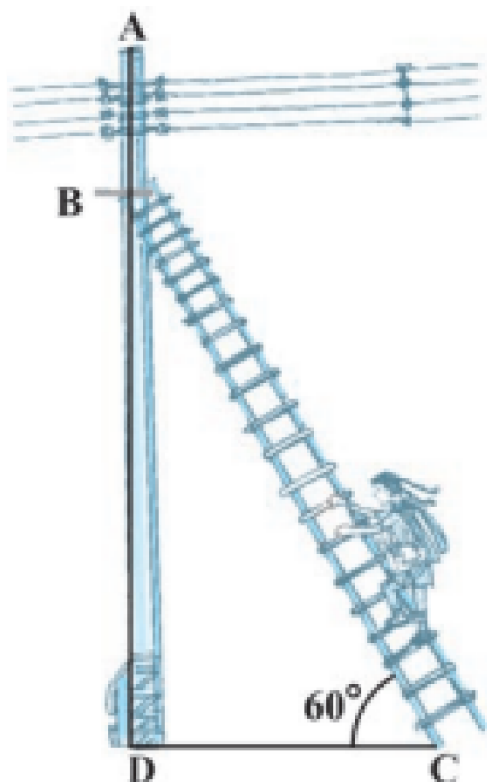
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An electrician has to repair an electric fault on a pole of height 5 m. She needs to reach a point 1.3 m below the top of the pole to undertake the repair work (see above figure). What should be the length of the ladder that she should use which, when inclined at an angle of  $60^\circ$  to the horizontal, would enable her to reach the required position and how far from the foot of the pole should she place the foot of the ladder? (You may take  $\sqrt{3} = 1.73$ )

- (a) 4 m, 2 m (b) 4.28 m, 2.14 m  
(c) 2.14 m, 4.28 m (d) NONE OF THESE

12 From a point P on the ground the angle of elevation of the top of a 10 m tall building is  $30^\circ$ . A flag is hoisted at the top of the building and the angle of elevation of the top of the flagstaff from P is  $45^\circ$ . Find the length of the flagstaff and the distance of the building from the point P respectively. (You may take  $\sqrt{3} = 1.732$ )

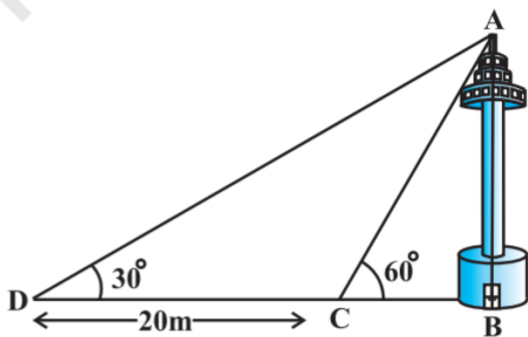
- (a) 17.32 m, 7.32 m (b) 7 m, 17.32 m  
(c) 7.32 m, 17 m (d) 7.32 m, 17.32 m

13 The shadow of a tower standing on a level ground is found to be 40 m longer when the Sun's altitude is  $30^\circ$  than when it is  $60^\circ$ . Find the height of the tower.

- (a) 20 m (b)  $20\sqrt{3}$  m  
(c)  $\frac{20}{\sqrt{3}}$  m (d) NONE OF THESE

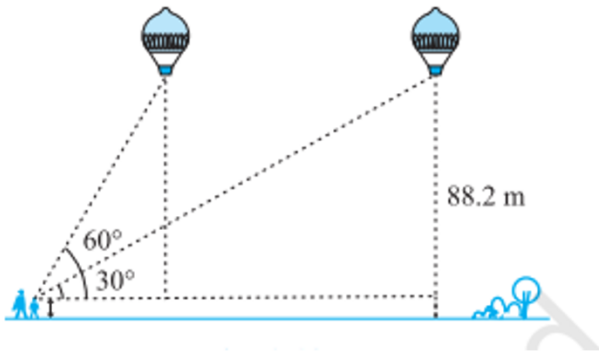




14	<p>From a point on a bridge across a river, the angles of depression of the banks on opposite sides of the river are <math>30^\circ</math> and <math>45^\circ</math>, respectively. If the bridge is at a height of 3 m from the banks, find the width of the river.</p> <p>(a) <math>3(\sqrt{3} + 1)</math> m (b) <math>\sqrt{3} + 1</math> m</p> <p>(c) <math>\frac{3}{(\sqrt{3} + 1)}</math> m (d) NONE OF THESE</p>	2
15	<p>A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground making an angle <math>30^\circ</math> with it. The distance between the foot of the tree to the point where the top touches the ground is 8 m. Find the height of the tree.</p> <p>(a) 8 m (b) <math>8\sqrt{3}</math> m</p> <p>(c) <math>\frac{8}{\sqrt{3}}</math> m (d) NONE OF THESE</p>	2
16	<p>A 1.5 m tall boy is standing at some distance from a 30 m tall building. The angle of elevation from his eyes to the top of the building increases from <math>30^\circ</math> to <math>60^\circ</math> as he walks towards the building. Find the distance he walked towards the building.</p> <p>(a) 19 m (b) <math>19\sqrt{3}</math> m</p> <p>(c) <math>\frac{19}{\sqrt{3}}</math> m (d) NONE OF THESE</p>	3
17	<p>From a point on the ground, the angles of elevation of the bottom and the top of a transmission tower fixed at the top of a 20 m high building are <math>45^\circ</math> and <math>60^\circ</math> respectively. Find the height of the tower.</p> <p>(a) <math>20(\sqrt{3} - 1)</math> m (b) <math>20(\sqrt{3} + 1)</math> m</p> <p>(c) <math>(\sqrt{3} - 1)</math> m (d) NONE OF THESE</p>	2
18	 <p>A TV tower stands vertically on a bank of a canal. From a point on the other bank directly opposite the tower, the angle of elevation of the top of the tower is <math>60^\circ</math>. From another point 20 m away from this point on the line joining this point to the foot of the tower, the angle of</p>	5





	<p>elevation of the top of the tower is <math>30^\circ</math> (see figure above). Find the height of the tower and the width of the canal.</p> <p>(a) <math>10\sqrt{3}m, 10m</math> (b) <math>\frac{10}{\sqrt{3}}m, 10\sqrt{3}m</math></p> <p>(c) <math>10\sqrt{3}m, 10\sqrt{3}m</math> (d) None of these</p>	
19	 <p>A 1.2 m tall girl spots a balloon moving with the wind in a horizontal line at a height of 88.2 m from the ground. The angle of elevation of the balloon from the eyes of the girl at any instant is <math>60^\circ</math>. After some time, the angle of elevation reduces to <math>30^\circ</math> (see above figure). Find the distance travelled by the balloon during the interval.</p> <p>(a) <math>\frac{294}{5\sqrt{3}}</math> m (b) <math>58\sqrt{3}</math> m</p> <p>(c) <math>\frac{294}{5}</math> m (d) 294 m</p>	2
20	<p>A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a car at an angle of depression of <math>30^\circ</math>, which is approaching the foot of the tower with a uniform speed. Six seconds later, the angle of depression of the car is found to be <math>60^\circ</math>. Find the time taken by the car to reach the foot of the tower from this point.</p> <p>(a) 2 seconds (b) 5 second</p> <p>(c) 4 seconds (d) 3 seconds</p>	3



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9<sup>th</sup>



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### SONAL SIR

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- Trained More then 1 lakh students online and Offline - Bilaspur, Bhilai, Delhi



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Selected in NTPC

P Chaitanya  
Selected in IIT-Bombay,  
Placed in Micron



Prakhar Jain  
Selected in IISc Bangalore,  
Placed in Samsung

## सीयू के छात्र मनु व मनीष का इंटेल कंपनी में चयन, 21 लाख सालाना पैकेज



बिलासपुर छात्र मनु कश्यप और मनीष कुमार सिंह का चयन इंटेल प्राइवेट लिमिटेड के लिए हुआ है। कंपनी इन छात्रों को सालाना 21 लाख रुपए का पैकेज दे रही है। ये दोनों छात्र सत्र 2017 में सीयू के इलेक्ट्रॉनिक्स एंड कम्युनिकेशन इंजीनियरिंग विभाग से बोटिक की उपाधि प्राप्त की। वर्तमान में ये भारतीय प्रौद्योगिकी संस्थान (आईआईटी) दिल्ली में एमटेक कर रहे हैं। इंटेल कॉर्पोरेशन एक अमेरिकी बहुराष्ट्रीय कंपनी है। सिलिकॉन वैली में सांता क्लारा स्थित इस कंपनी का भारत में मुख्यालय बंगलुरु है।

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# MATHEMATICS - 10TH

## IMPORTANT MCQ'S – MATHS (10TH GRADE)

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1	2	3	4	5	6	7	8
C	D	C	B	C	A	A	B
9	10	11	12	13	14	15	16
C	B	B	D	B	A	B	B
17	18	19	20	21	22	23	24
A	A	B	D	-	-	-	-
25	26	27	28	29	30	31	32
-	-	-	-	-	-	-	-
33	34	35	36	37	38	39	40
-	-	-	-	-	-	-	-
41	42	43	44	45	46	47	48
-	-	-	-	-	-	-	-