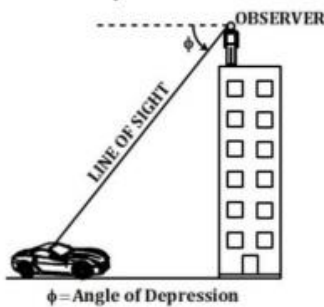


## Maths - 10th

Case study:



Rahul is driving a car. On his way, he approaches a tall building and observes that Rajesh is standing at the top of that building. A signboard beside the building read - Angle of depression =

$60^\circ$ . The distance from the building at which Rahul stops his car is 50cm.  
(CASE\_STUDY)

Q (1): Is the angle of elevation from Rahul's car to the top of building, where Rajesh is standing the same as the angle of depression ?

Q (2): What is the angle of elevation from Rahul's car to the top of the building, where Rajesh is standing ?

- |                |                 |
|----------------|-----------------|
| (a) $30^\circ$ | (b) $60^\circ$  |
| (c) $90^\circ$ | (d) $120^\circ$ |

Q (3): What is the height of the tower ?

- |           |                     |
|-----------|---------------------|
| (a) 50 cm | (b) $50\sqrt{3}$ cm |
| (c) 60 cm | (d) $60\sqrt{3}$ cm |

Q (4): What is the length of the line of sight ?

- |            |            |
|------------|------------|
| (a) 50 cm  | (b) 70 cm  |
| (c) 100 cm | (d) 120 cm |

Q (5): Will the angle of elevation increase or decrease as the car approaches the building ?

- |              |              |
|--------------|--------------|
| (a) Increase | (b) Decrease |
|--------------|--------------|

Case study:



Boojho went to a park. He went up the slide to play. The angle of elevation

$\theta$  of the slide is

$30^\circ$ . But the base from which the angle of elevation is measured is 5 cm above the ground level and the distance from the staircase is 10 cm. (Use  $\sqrt{3} = 1.732$ ) (CASE\_STUDY)

Q (6): What is the distance of the staircase from the point from which the angle of elevation of the slide is measured ?

- (a) 5 cm (b) 10 cm  
(c) 15 cm (d) 20 cm

Q (7): What is the angle of depression from the top of the slide to its base ?

- (a)  $30^\circ$  (b)  $60^\circ$   
(c)  $90^\circ$  (d)  $120^\circ$

Q (8): What is the height of the staircase ?

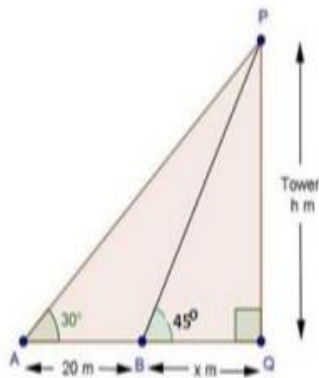
- (a) 5.77 cm (b) 10.77 cm  
(c) 15.77 cm (d) None of these

Q (9): What is the length of the slide ?

- (a) 9.874 cm (b) 8.46 cm  
(c) 11.547 cm (d) None of these

Q (10): Will the angle of elevation increase or decrease if the staircase was made taller ?

- (a) Increase (b) Decrease



Priya was walking on the road when she saw a high tower in front of her. She observed that when she was standing at point A, the angle of elevation to the top of the tower was

$30^\circ$ . On moving 20 m towards the tower to point B, the angle of elevation changed to  $45^\circ$  as shown in the figure. (Use  $\sqrt{3} = 1.732$ ) (CASE\_STUDY)

Q (11): What is the height of the tower ?

- (a) 14.35 cm (b) 16.76 cm  
(c) 27.32 cm (d) None of these

Q (12): What is the distance of Priya when she is standing at point B from the base of the tower ?

- (a) 14.35 cm (b) 16.76 cm  
(c) 27.32 cm (d) None of these

Q (13): What is the value of

$\angle APQ$  ?

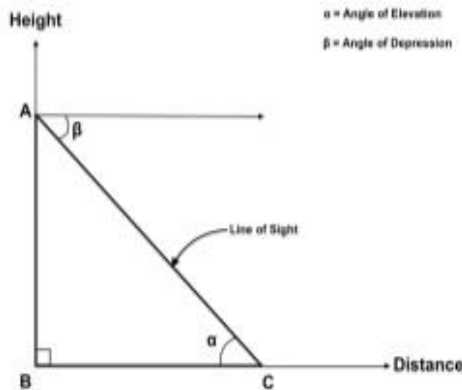
- (a)  $30^\circ$  (b)  $60^\circ$   
(c)  $90^\circ$  (d)  $120^\circ$

Q (14): What is the value of

$\angle BPQ$  ?

- (a)  $30^\circ$  (b)  $45^\circ$   
(c)  $90^\circ$  (d)  $120^\circ$

Q (15): What was the distance of Priya from the base of the tower when she was



Boojho was playing in a garden. He went near the fence and saw that a bird was sitting over it. The angle of depression of the bird was found to be

$60^\circ$ , when he was standing at a distance of 10 m from the fence. (CASE\_STUDY)

Q (21): What is the angle of elevation of the bird as seen by Boojho ?

- (a)  $30^\circ$  (b)  $45^\circ$   
 (c)  $60^\circ$  (d)  $90^\circ$

Q (22): Is the angle of elevation equal to the angle of depression ?

Q (23): What is the height of the fence as calculated by Boojho ?

- (a) 10 cm (b)  $10\sqrt{3}$  cm  
 (c) 20 cm (d)  $20\sqrt{3}$  cm

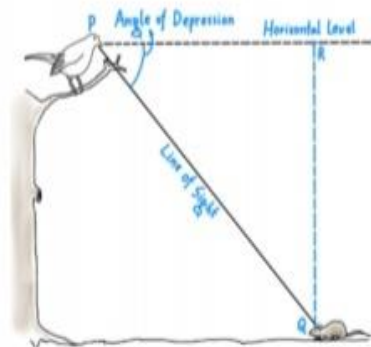
Q (24): Will the angle of depression increase or decrease if the fence was taller ?

- (a) Increase (b) Decrease

Q (25): Will the angle of depression increase or decrease if Boojho was at a distance of 20 cm from the fence ?

- (a) Increase (b) Decrease

Case study:



A mouse was walking past a tree when it saw a bird sitting on the trunk of the tree. The angle of elevation of the bird from the mouse was

$45^\circ$  and the height of the trunk from the ground was 25 cm. (CASE\_STUDY)

Q (26): What would be the angle of depression of the bird as observed by the mouse ?

- (a)  $30^\circ$  (b)  $45^\circ$   
 (c)  $60^\circ$  (d)  $90^\circ$

Q (27): How far was the mouse from the tree ?

- (a) 25 cm (b) 50 cm  
 (c) 75 cm (d) 100 cm

Q (28): What is the angle of elevation of the bird as seen by the mouse, when the mouse is just at the base of the tree ?

- (a)  $0^\circ$  (b)  $30^\circ$   
 (c)  $60^\circ$  (d)  $180^\circ$

Q (29): Will the angle of depression increase if the bird was sitting at a higher branch ?

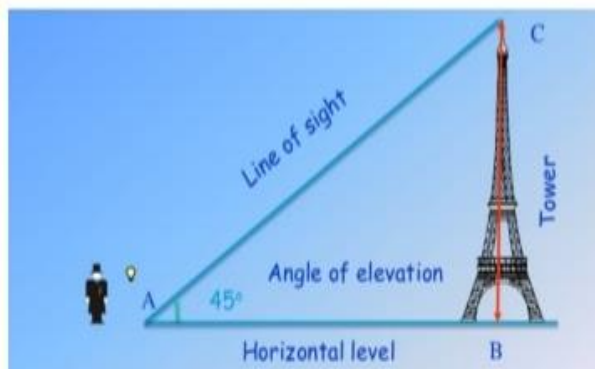
Q (30): What is the value of the

$\angle RPQ$  ?

- (a)  $0^\circ$  (b)  $30^\circ$   
 (c)  $45^\circ$  (d)  $60^\circ$

Case study:





Mr. Henry visited the Eiffel tower. He was standing at a place from where the angle of elevation to the top of the tower was

$45^\circ$ . The height of the tower was 300m. (CASE\_STUDY)

Q (31): At what distance was Mr. Henry standing from the tower ?

- (a) 100 m (b) 200 m  
(c) 300 m (d) 400 m

Q (32): Will the angle of elevation of the mid point of the tower as seen by Mr. Henry be

$30^\circ$  ?

Q (33): What is the length of the line of sight ?

- (a) 100 (b) 200  
 $\sqrt{3}$  m  $\sqrt{3}$   
(c) 300 (d) 400  
 $\sqrt{2}$   $\sqrt{3}$

Q (34): What is the value of the  $\angle ACB$  ?

- (a)  $22.5^\circ$  (b)  $45^\circ$   
(c)  $67.5^\circ$  (d)  $90^\circ$

Q (35): Will the angle of elevation increase if Mr. Henry starts moving towards the tower ?

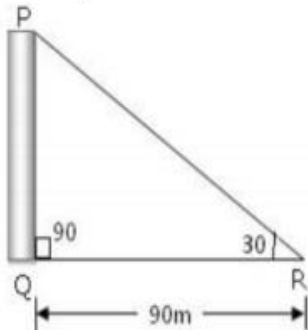
Case study:



(c)  $60^\circ$

(d)  $90^\circ$

Case study:



A worker was standing at a distance of 90 m from a furnace whose angle of elevation as seen by the man was

$30^\circ$ .

(Use

$\sqrt{3} = 1.732$ ) (CASE\_STUDY)

Q (41): What is the value of

$\angle QPR$ ?

(a)  $30^\circ$

(b)  $45^\circ$

(c)  $60^\circ$

(d)  $90^\circ$

Q (42): What is the height of the furnace?

(a) 51.9 m

(b) 52.9 m

(c) 53.9 m

(d) 54.9 m

Q (43): What is the length of PR?

(a) 101.9 m

(b) 103.9 m

(c) 105.9 m

(d) 111.9 m

Q (44): For the angle of elevation to increase, the furnace has to be

(a) Taller

(b) Shorter

Q (45): Should the man move forward or backward so that the angle of elevation decreases?

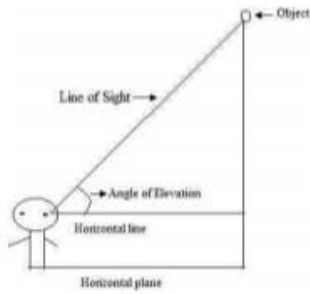
(a) Forward

(b) Backward

Case study:







Ravi was standing at a distance of 10 m from the lamp post. While playing tennis his ball got stuck at the top of the lamp post. He observed that the angle of elevation of the ball was

$45^\circ$ . Ravi was of height 2m.

(Use

$\sqrt{3} = 1.732$ ) (CASE\_STUDY)

Q (46): Find the height of the ball from the ground.

- (a) 10 m (b) 11 m  
(c) 12 m (d) 13 m

Q (47): Find the length of the line of sight of the ball.

- (a) 14.14 m (b) 15.15 m  
(c) 16.16 m (d) 17.17 m

Q (48): What is the angle of depression of the ball ?

- (a)  $30^\circ$  (b)  $45^\circ$   
(c)  $60^\circ$  (d)  $90^\circ$

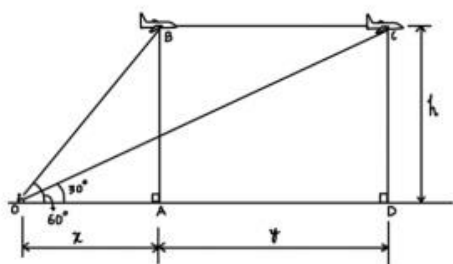
Q (49): Will the angle of elevation increase if Ravi moves away from the lamp post ?

Q (50): What is the value of the unknown angle of the triangle ?

- (a)  $30^\circ$  (b)  $45^\circ$   
(c)  $60^\circ$  (d)  $90^\circ$

Case study:





An aeroplane is flying in the sky. It passes through the point B and C and is at a height of 100 m from the ground. The angle of elevation of the aeroplane at points B and C are as given in the figure.

(Use

$\sqrt{3} = 1.732$ ) (CASE\_STUDY)

Q (51): What is the value of x ?

- (a) 57.735 m (b) 115.465 m  
(c) 115.47 m (d) 199.99 m

Q (52): What is the value of y ?

- (a) 57.735 m (b) 115.465 m  
(c) 115.47 m (d) 199.99 m

Q (53): What is the length of OB ?

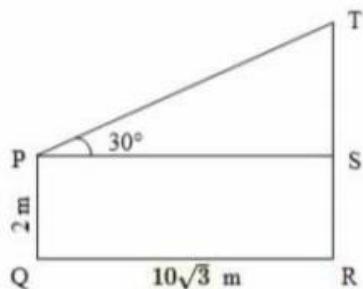
- (a) 57.735 m (b) 115.465 m  
(c) 115.47 m (d) 199.99 m

Q (54): What is the length of OC ?

- (a) 57.735 m (b) 115.465 m  
(c) 115.47 m (d) 199.99 m

Q (55): Does the angle of elevation increase if the aeroplane move further forward ?

Case study:



A man PQ of height 2 m is standing in front of a pole TR. The angle of elevation of the pole as seen by the man is given in the figure.

(Use

$$\sqrt{3} = 1.732 ) \text{ (CASE\_STUDY)}$$

Q (56): What is the height of the tower ?

- (a) 12 m (b) 20 m  
(c) 23.99 m (d) 10 m

Q (57): What is the value of PT ?

- (a) 12 m (b) 20 m  
(c) 23 m (d) 10 m

Q (58): What is the value of

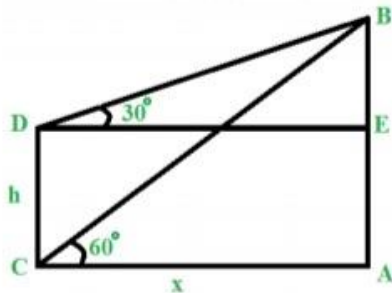
$\angle PTS$  ?

- (a)  $30^\circ$  (b)  $45^\circ$   
(c)  $60^\circ$  (d) None of these

Q (59): Will the angle of elevation increase if the man moves closer to the pole ?

Q (60): Will the angle of elevation increase if the pole is smaller in height ?

Case study:



A small child CD is standing at a distance of 5m from his father AB. The angle of elevation of the father from the foot and head of the child is as given in the figure.

(Use

$$\sqrt{3} = 1.732 ) \text{ (CASE\_STUDY)}$$

Q (61): What is the height of the father ?

- (a) 8.66 m (b) 9.99 m  
(c) 2.88 m (d) None of these

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Q (62): What is the value of BC ?

- (a) 8.66 m  
(c) 2.88 m

- (b) 9.99 m  
(d) None of these

Q (63): What is the value of BD ?

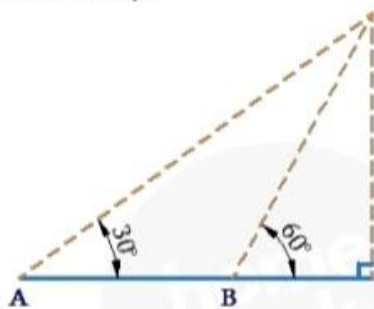
- (a) 8.66 m  
(c) 5.77 m

- (b) 9.99 m  
(d) None of these

Q (64): Will the angle of elevation increase if the child moves towards his father ?

Q (65): Will the angle of elevation increase if the father moves towards his child ?

Case study:



A girl while playing in a garden sees a fence in front of her of height 20 m. In the first position of the girl, the angle of elevation is

$30^\circ$ . When she approaches nearer, it changes to

$60^\circ$  (Use

$\sqrt{3} = 1.732$ ) (CASE\_STUDY)

Q (66): What is the distance of the girl from the fence from the first position ?

- (a) 34.64 m  
(c) 23.1 m

- (b) 11.54 m  
(d) None of these

Q (67): What is the distance of the girl from the fence from the second position ?

- (a) 34.64 m  
(c) 23.1 m

- (b) 11.54 m  
(d) None of these

Q (68): How much distance does the girl move ?

- (a) 34.64 m  
(c) 23.1 m

- (b) 11.54 m  
(d) None of these

Q (69): What is the length of the line of sight of the girl when she is in the first position ?

- (a) 39.99 m

- (b) 23.09 m
-

(c) 11.54 m

(d) None of these

Q (70): What is the length of the line of sight of the girl when she is in the second position ?

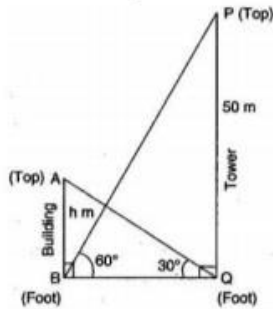
(a) 39.99 m

(b) 23.09 m

(c) 11.54 m

(d) None of these

Case study:



A building is situated at a distance from a tall tower of length 50 m. The angle of elevation of the top of the tower and that of the building from the foot of each other is as given in the figure.

(Use

$\sqrt{3} = 1.732$ ) (CASE\_STUDY)

Q (71): What is the distance between the building and the tower ?

(a) 28.86 m

(b) 16.67 m

(c) 57.73 m

(d) 33.32 m

Q (72): What is the height of the building ?

(a) 28.86 m

(b) 16.67 m

(c) 57.73 m

(d) 33.32 m

Q (73): What is the length of BP ?

(a) 28.86 m

(b) 16.67 m

(c) 57.73 m

(d) 33.32 m

Q (74): What is the length of AQ ?

(a) 28.86 m

(b) 16.67 m

(c) 57.73 m

(d) 33.34 m

Q (75): Will the angles of elevation change if the buildings move apart ?































