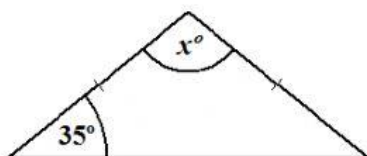


GEOMETRY AND TRIGONOMETRY

Please attempt the following questions – it is a paper and pencil test. Work out your answers.

Then, click on the answer of your choice.

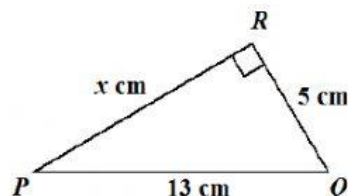
1.



In the isosceles triangle shown above, the value of x is

- (A) 35
- (B) 70
- (C) 110
- (D) 145

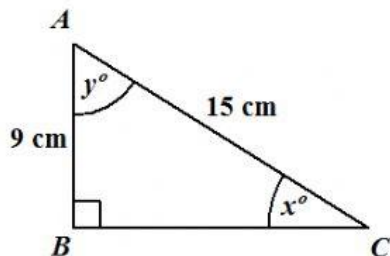
3.



In the triangle PQR , not drawn to scale, PQ is 13 cm, RQ is 5 cm, PR is x cm and angle PRQ is 90° . The value of x is

- (A) $\sqrt{18}$
- (B) 8
- (C) 12
- (D) 18

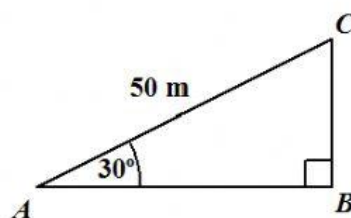
2.



In the right-angled triangle above, $\frac{9}{15} =$

- (A) $\sin y$
- (B) $\cos x$
- (C) $\tan y$
- (D) $\cos y$

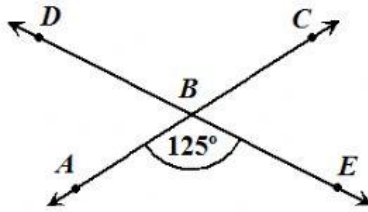
4.



In the triangle above, not drawn to scale, the angle $CAB = 30^\circ$ and $AC = 50$ m. The length of BC , in metres, is

- (A) $50 \sin 30^\circ$
- (B) $50 \cos 30^\circ$
- (C) $50 \tan 30^\circ$
- (D) $50 \sin 60^\circ$

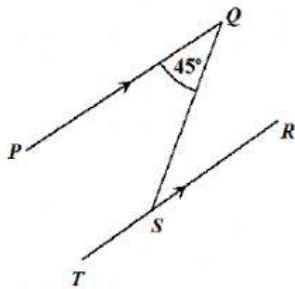
5.



In the diagram above, not drawn to scale, AC and DE are straight lines intersecting at B . Angle $ABE = 125^\circ$. The measure of angle CBD is

- (A) 55°
- (B) 125°
- (C) 235°
- (D) 305°

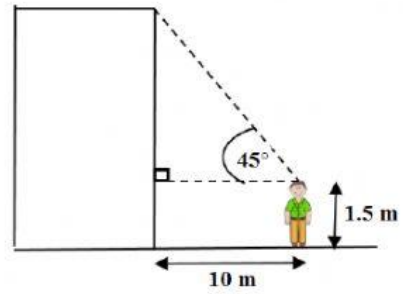
6.



In the diagram above, not drawn to scale, PQ is parallel to TR and angle PQS is 45° . The measure of angle QST is

- (A) 40°
- (B) 45°
- (C) 135°
- (D) 145°

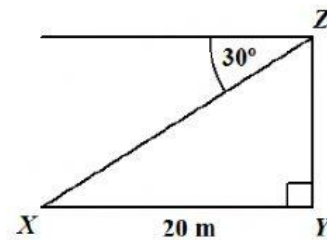
7.



A boy of height 1.5 metres stands 10 metres from the foot of a building and the angle of elevation of the top of the building is 45° . The height of the building, in metres, is

- (A) $11.5 \tan 45^\circ$
- (B) $1.5 + 10 \sin 45^\circ$
- (C) $1.5 + 10 \tan 45^\circ$
- (D) $1.5 + 10 \cos 45^\circ$

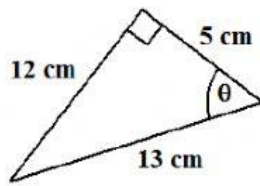
8.



The diagram above, not drawn to scale, shows that the angle of depression of a point X from Z is 30° . If X is 20 metres from Y , the height of YZ , in metres, is

- (A) $20 \sin 30^\circ$
- (B) $20 \tan 30^\circ$
- (C) $20 \cos 30^\circ$
- (D) $20 \sin 60^\circ$

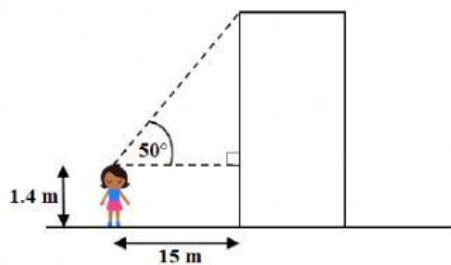
9.



In the right-angled triangle above, $\tan \theta$, is

- (A) $\frac{5}{12}$
- (B) $\frac{5}{13}$
- (C) $\frac{12}{13}$
- (D) $\frac{12}{5}$

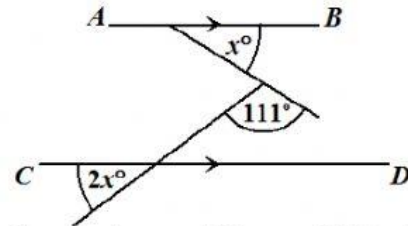
10.



A girl of height 1.4 metres stands 15 metres from the foot of a building and the angle of elevation of the top of the building is 50° . The height of the building, in metres, is

- (A) $16.4 \tan 50^\circ$
- (B) $1.4 + 15 \sin 50^\circ$
- (C) $1.4 + 15 \tan 50^\circ$
- (D) $1.4 + 15 \cos 50^\circ$

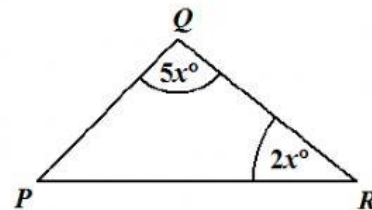
11.



In the figure above, AB is parallel to CD . Find the value of x .

- (A) 69
- (B) 34.5
- (C) 23
- (D) 11.5

12.



In a triangle PQR , angle $Q = 5x^\circ$ and angle $R = 2x^\circ$. What is the size of angle P ?

- (A) 36°
- (B) 40°
- (C) $\left(\frac{180}{7x}\right)^\circ$
- (D) $(180 - 7x)^\circ$