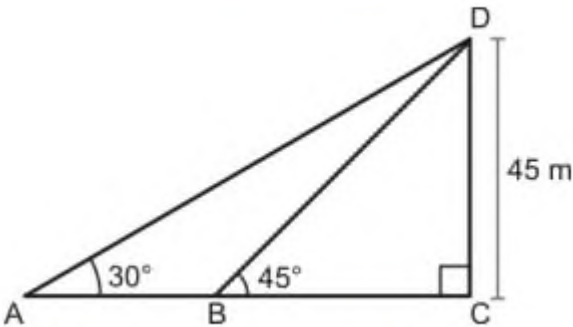


1	<p>In the figure below, what is the length of AB?</p>  <p> <input type="checkbox"/> 1 $45\sqrt{3}$ m <input type="checkbox"/> 2 $\frac{45}{\sqrt{3}}$ <input type="checkbox"/> 3 $45(\sqrt{3} - 1)$ m <input type="checkbox"/> 4 $45(\sqrt{3} + 1)$ m </p>
2	<p>$1 - \frac{\sin^2 \theta}{1 + \cos \theta} =$</p> <p> <input type="checkbox"/> 1 $\sin \theta$ <input type="checkbox"/> 2 $\cos \theta$ <input type="checkbox"/> 3 $\sec \theta$ <input type="checkbox"/> 4 $\operatorname{cosec} \theta$ </p>
3	<p>$\cos^2 \theta / (\cot^2 \theta - \cos^2 \theta) =$</p> <p> <input type="checkbox"/> 1 $\sec^2 \theta$ <input type="checkbox"/> 2 $\tan^2 \theta$ <input type="checkbox"/> 3 $\sin^2 \theta$ <input type="checkbox"/> 4 $\operatorname{cosec}^2 \theta$ </p>
4	<p>If $x = a \sec \theta$ and $y = b \tan \theta$, where a and b are constants. Which of the following expressions hold true?</p> <p> <input type="checkbox"/> 1 $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ <input type="checkbox"/> 2 $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ <input type="checkbox"/> 3 $\frac{a^2}{x^2} - \frac{b^2}{y^2} = 1$ <input type="checkbox"/> 4 $a^2x^2 + b^2y^2 = a^2b^2$ </p>
5	<p>$\frac{1 + \tan \theta}{1 + \cot \theta} =$</p> <p> <input type="checkbox"/> 1 1 <input type="checkbox"/> 2 $\sec \theta$ <input type="checkbox"/> 3 $\tan \theta$ <input type="checkbox"/> 4 $\cot \theta$ </p>

6

$$\frac{1}{\tan \theta + \cot \theta} =$$

1 $\cos \theta \sin \theta$

2 $\sec \theta \sin \theta$

3 $\tan \theta \cot \theta$

4 $\sec \theta \operatorname{cosec} \theta$

7

α is an acute angle. $\sin \alpha + \cos \alpha$

1 is greater than 1.

2 is less than 1.

3 is equal to 1.

4 (We cannot say any of these as it depends on value of α .)

8

If $x = a \sec \theta$ and $y = b \tan \theta$, where a and b are constants. Which of the following expressions hold true?

1 $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

2 $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$

3 $\frac{a^2}{x^2} - \frac{b^2}{y^2} = 1$

4 $a^2x^2 + b^2y^2 = a^2b^2$

9

$$(\cot^2 \theta - \cos^2 \theta) / \cos^2 \theta =$$

1 $\cot^2 \theta$

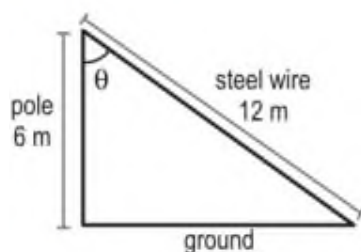
2 $\tan^2 \theta$

3 $\cos^2 \theta$

4 $\sec^2 \theta$

10

The height of a pole is 6 m from the ground. Its top end is connected to a steel wire. The wire is making an angle θ with the pole. The other end of the wire is fixed at the ground as shown.



Which of the following is true?

1 $\sin \theta = \frac{1}{2}$

2 $\cos \theta = \frac{1}{2}$

3 $\tan \theta = \frac{1}{2}$

4 $\sec \theta = \frac{1}{2}$

11

Given that $\cot \theta = 2$, what is the value of $\cos \theta$?

1 $\frac{1}{\sqrt{2}}$

2 $\frac{1}{2}$

3 $\frac{2}{5}$

4 $\frac{2}{\sqrt{5}}$

12

$\sec \theta = \frac{2}{\sqrt{3}}$. Which of these could be the value of θ ?

1 30°

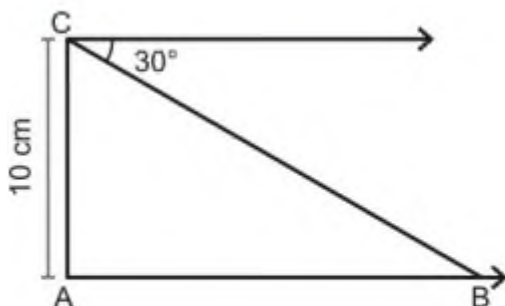
2 45°

3 60°

4 90°

13

In the figure below, BC is a transversal that cuts the given pair of parallel lines. $CA \perp AB$. $AC = 10$ cm.



What is the length of AB?

1 5 cm

2 $\frac{10}{3}$ cm

3 $10\sqrt{3}$ cm

4 20 cm

14

If $x = \sec \theta$ and $y = \tan \theta$,

Which of these expressions equal to 1?

1 $x^2 + y^2$

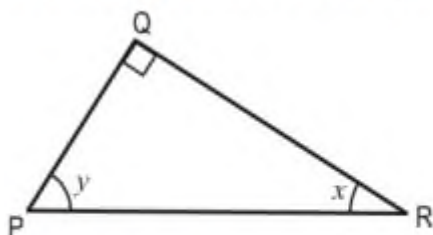
2 $x^2 - y^2$

3 $y^2 - x^2$

4 $(x - y)^2$

15

In the $\triangle PQR$ shown below, the measure of angle y is 2 times the measure of angle x .



What is $\sin x$?

1 0

2 $\frac{1}{2}$

3 $\frac{1}{\sqrt{2}}$

4 $\frac{\sqrt{3}}{2}$

16	<p>x is an angle such that $\cos x = \cos 60^\circ \cos 30^\circ + \sin 60^\circ \sin 30^\circ$</p> <p>What is the value of x ?</p> <p>1 30° 2 45° 3 60° 4 90°</p>
17	$\frac{\sin P - \sin Q}{\cos P + \cos Q} + \frac{\cos P - \cos Q}{\sin P + \sin Q} =$ <p>1 -1 2 0 3 1 4 2</p>
18	<p>For which of these values of θ is $\tan \theta \times \cot \theta = 1$?</p> <p>1 0° 2 45° 3 90° 4 (for all values of θ)</p>
19	<p>If $\sec \theta = \frac{\sqrt{11}}{3}$, what is the value of $1 - \tan^2 \theta$?</p> <p>1 $-\frac{2}{9}$ 2 $\frac{7}{9}$ 3 $\frac{8}{11}$ 4 $\frac{9}{11}$</p>
20	<p>$1 + \tan 60^\circ \cot 30^\circ + \tan 30^\circ \cot 60^\circ =$</p> <p>1 $\frac{5}{3}$ 2 3 3 $\frac{13}{3}$ 4 7</p>

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