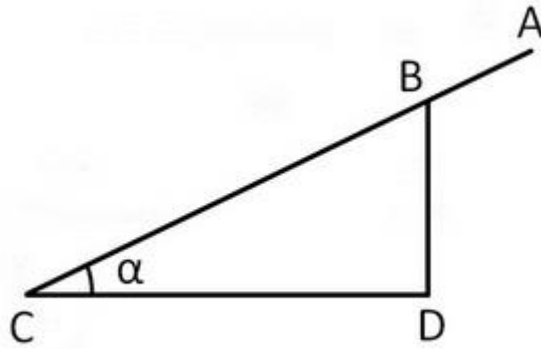## Question #72593

1. A 12ft ramp rests against the edge of the floor at the back door of a truck. To make it stable 2.5 ft, of the ramp extends beyond the edge of the floor, which is 3.5 ft above the level ground. Find the cosine and tangent That makes with the ground?

Solution.

$$|\overline{AC}| = 12$$

$$|\overline{AB}| = 2.5$$

$$|\overline{BD}| = 3.5$$

Find the hypotenuse:

$$|\overline{BC}| = |\overline{AC}| - |\overline{AB}| = 12 - 2.5 = 9.5$$

Sin of angle is defined as the ratio of the side opposite the angle to the hypotenuse:

$$\sin \alpha = \frac{|\overline{BD}|}{|\overline{BC}|} = \frac{3.5}{9.5} = 0.3684$$

Find the value of angle α:

$$\alpha = \arcsin\ (0.3684) = 21.617°$$

Find cosine and tangent of angle α:

$$\cos \alpha = \cos\ (21.617°) = 0.9297$$

$$\tan \alpha = \tan\ (21.617°) = 0.3963$$

Answer: cosine is equal 0.9297, tangent is equal 0.3963.

Answer provided by https://www.AssignmentExpert.com