

WEDNESDAY November 23, 2011
 HW #17 (LAST ONE)
 Aim: How do we solve problems using angles of elevation or angles of depression?
 HW #7-#17 1/30/2011 At 11:45 pm.
 Dorku: sohCAHTOA

Find the value of the sine, cosine, and tangent functions for θ .

1. $\sin \theta = \frac{48}{60} = \frac{4}{5}$
 $\cos \theta = \frac{36}{60} = \frac{3}{5}$
 $\tan \theta = \frac{48}{36} = \frac{4}{3}$

2. $\sin \theta = \frac{27}{123} = \frac{9}{41}$
 $\cos \theta = \frac{120}{123} = \frac{40}{41}$
 $\tan \theta = \frac{27}{120} = \frac{9}{40}$

3. $\sin \theta = \frac{15}{39} = \frac{5}{13}$
 $\cos \theta = \frac{36}{39} = \frac{12}{13}$
 $\tan \theta = \frac{15}{36} = \frac{5}{12}$

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I- Angle of Depression/Elevation

Note: $m\angle \text{Depression} = m\angle \text{Elevation}$

ex) A biologist whose eye level is 6 ft. above the ground measures the angles of elevation to the top of a tree to be 38.7° . If the biologist is standing 180 ft. from the tree's base, what is the height of the tree to the nearest foot?

Nov 23-9:55 AM

ex) A biologist whose eye level is 6 ft. above the ground measures the angles of elevation to the top of a tree to be 38.7° . If the biologist is standing 180 ft. from the tree's base, what is the height of the tree to the nearest foot?

What I have: 38.7°
 What I want: Adj. opp.

$\tan \theta = \frac{\text{opp}}{\text{adj}}$

$\tan 38.7^\circ = \frac{x}{180}$

$180 \times \tan 38.7^\circ = x$

$144.20 = x$

$+ \frac{6}{150 \text{ ft}}$ Nearest foot

Nov 23-10:11 AM