Solutions

Group Work 5

1. You are 10 feet off the ground, at the top of a ramp that makes a 30 degree angle with the ground. How long is the ramp? How long is the ramp if the angle is 24 degrees instead of 30 degrees?

See Gp Wk 4

2. Sketch the graph of \( y = \tan\left(\frac{x}{2} - \frac{\pi}{2}\right) \)

\[ y = \tan x \quad \text{Shift} \quad \frac{\pi}{2} \quad \text{to the right} \quad y = \tan \left( x - \frac{\pi}{2} \right) \]

\[ y = \tan\left(\frac{x}{2} - \frac{\pi}{2}\right) \quad \text{\ast Stretch horizontally by factor of 2} \]
3. Evaluate the following expressions.

(a) $\cos^{-1}(1/2) = \pi/3$

Since $\cos \pi/3 = 1/2$

and $0 \leq \pi/3 \leq \pi$

(b) $\cos^{-1}(\sin(\pi/6))$

$= \cos^{-1}(1/2) = \pi/3$

(c) $\cos(\sin^{-1}(-3/5))$