

NAME: Solution

MAC 1147 Section 3079
Quiz Nine

Please show all of your work in a NEAT and ORGANIZED fashion.

1. Use the properties of inverse trigonometric functions to evaluate the following expressions:

(a) (1 point) $\sin(\arcsin(0.4)) = 0.4$

(since sin and arcsin are inverses)

(b) (2 points) $\arccos(\cos(\frac{4\pi}{3})) =$

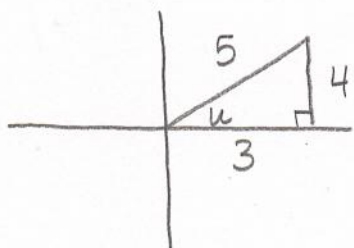
$\arccos(-\frac{1}{2}) =$

$\frac{2\pi}{3}$

→ not in the range of arccos

2. (3 points) Find the exact value of the expression. (Hint: Sketch a right triangle.)

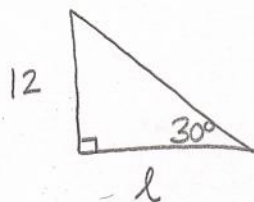
$\sec(\arcsin(\frac{4}{5}))$



Let $u = \arcsin(\frac{4}{5})$,

$\sec u = \frac{\text{hyp}}{\text{adj}} = \frac{5}{3}$

3. (3 points) The sun is 30° above the horizon. Find the length of a shadow cast by a park statue that is 12 feet tall.



$\tan 30^\circ = \frac{12}{l}$

$l = \frac{12}{\tan 30^\circ}$

$= \frac{12}{1/\sqrt{3}}$

$= 12\sqrt{3} \text{ ft}$