NAME: Solution

MAC 1147 Section 3077
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) $\cos(\arccos(-0.7)) = -0.7$

(since cos and arccos are inverses).

(b) (2 points) $\arcsin(\sin(\frac{5\pi}{6})) =$ → not in the range of arcsin

$\arcsin\left(\frac{1}{2}\right) =$

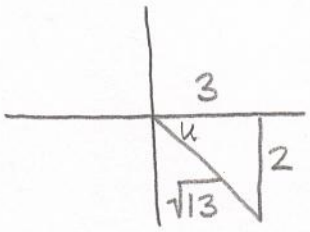
$\frac{\pi}{6}$

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

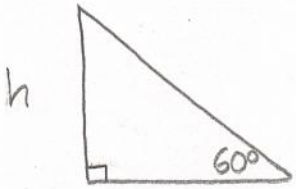
$\sin(\arctan(-\frac{2}{3}))$

Let $u = \arctan\left(-\frac{2}{3}\right)$,

$\sin(u) = -\frac{2}{\sqrt{13}}$



3. (3 points) The length of a shadow of a tree is 125 feet when the angle of elevation of the sun is 60°. Find the height of the tree.



$\tan(60°) = \frac{h}{125}$

$h = 125 \tan 60°$

$= 125(\sqrt{3})$

$= 125\sqrt{3}$ ft