Name: _____ **Panther ID:** _____

Worksheet May 18 Trigonometry Summer A 2016

1. Find, without a calculator, the exact value of each of the following. Use the unit circle.

$\sin(\pi/6) =$ $\cos(120^\circ) =$ $\cos(5\pi/4) =$ $\tan(5\pi/4) =$

$\sec(0) =$ $\csc(150^\circ) =$ $\cot(7\pi/2) =$ $\tan(7\pi/2) =$

2. (a) Given that θ is an angle in the first quadrant and that $\sin(\theta) = \frac{1}{3}$, find, without calculator, the exact value of each of the following

$\cos(\theta) =$ $\tan(\theta) =$ $\cot(\theta) =$ $\sec(\theta) =$ $\csc(\theta) =$

(b) Given that θ is an angle in the second quadrant and that $\sin(\theta) = \frac{1}{3}$, find, without calculator, the exact value of each of the following

$\cos(\theta) =$ $\tan(\theta) =$ $\cot(\theta) =$ $\sec(\theta) =$ $\csc(\theta) =$

(c) Given that θ is an angle in the first quadrant and that $\tan(\theta) = 2$, find, without calculator, the exact value of each of the following

$\cos(\theta) =$ $\sin(\theta) =$ $\cot(\theta) =$ $\sec(\theta) =$

(d) Given that θ is an angle in the third quadrant and that $\tan(\theta) = 2$, find, without calculator, the exact value of each of the following

$\cos(\theta) =$ $\sin(\theta) =$ $\cot(\theta) =$ $\sec(\theta) =$

3. (a) Two slices of pizza are sitting on a table. Slice1 is cut from a large pizza with a radius $r_1 = 5$ in and has a central angle $\theta_1 = 40°$. Slice2 is cut from a medium pizza with a radius $r_2 = 4$ in. Two ants, Ant1 and Ant2, are setting up a race (see the picture). Assuming the ants start at the same time and have the same speed, which ant wins the race?

(b) Suppose now the race is over and that the two ants are allowed to buy their corresponding slices of pizzas (for winter provisions for their colonies – the ants belong to different colonies :)). Each slice costs \$1. Which ant gets the better deal?