

**Math 115 Section 03 (Barsamian) Quiz 7**  
Ohio University, Thursday 21 October, 2004

Name (print): \_\_\_\_\_

Q7:  $\frac{\quad}{20}$  Attendance:  $\frac{\quad}{33}$  Quizzes:  $\frac{\quad}{140}$  Exams:  $\frac{\quad}{200}$  Course:  $\frac{\quad}{373} =$  % =

1 Sketch the graph of the function  $y = 3 \tan\left(x + \frac{\pi}{4}\right)$  using transformations of graphs. You should draw three graphs. Be sure to label key points with their coordinates.

2 Suppose that  $P(t)$  lies in the second quadrant and on the line  $y = -2x$ . Determine the values of the six trigonometric functions when  $t$  is used as input. That is, find  $\cos(t)$ ,  $\sin(t)$ ,  $\tan(t)$ ,  $\sec(t)$ ,  $\csc(t)$ ,  $\cot(t)$ .



3] The half-angle formula for cosine is  $\cos\left(\frac{t}{2}\right) = \pm\sqrt{\frac{1+\cos(t)}{2}}$ .

(a) Use the above formula to find  $\cos\left(\frac{3\pi}{8}\right)$ .

(b) Use the above formula to find  $\cos\left(\frac{5\pi}{8}\right)$ .

4] While visiting New York City, you want to estimate the height of a tall building. Using a tape measure and a protractor, you have figured out that when standing 500ft from the base of the building, you must look upward at an angle of  $30^\circ$  to see the top of the building. How tall is the building?

