

# Honors Trigonometry

Name \_\_\_\_\_

Copy original problem.

Per \_\_\_\_\_

Date \_\_\_\_\_

Convince *me* that **you** understand the concept!**No Calculators.**

## Chapter 1 Exam

**I** Define Absolute Value. (5 pts)**II** Solve. Graph solution on a properly labeled numberline. (15 pts ea)

A)  $\frac{|9 - 2x|}{x - 5} \leq \frac{7}{x - 5}$

B)  $x\left(\frac{1}{2}x - 1\right) - 6 = -\frac{1}{2}$

**III** Rewrite as a piece-meal function. Graph:  $f(x) = |x + 2| + |x - 3|$  (15 pts)**IV** Given:  $f(x) = \frac{x + 2}{x - 3}$ ,  $g(x) = \frac{x - 1}{x + 1}$ , and  $h(x) = \sqrt{x}$  (5 pts ea)a) Find the value of  $f\left(g\left(\frac{1}{3}\right)\right)$ . b) Find the **formula** ONLY for  $g(f(x))$ .c) Find the **domain** ONLY for  $f(f(h(x)))$ . d) Find the **domain** ONLY for  $h(f(x))$ .**V** For each of the following, list the three items including the given item.  $(x, y)$  is the coordinate pair on the unit circle,  $Z$  is the arc length in radians, and the Greek letter alpha ( $\alpha$ ) is the angle in degrees. Draw the circle for each.  
(NOTE: You will draw a total of 6 circles!) (25 pts total)A) Find  $(x, y)$  and  $\alpha$  given: 1)  $z = \frac{7\pi}{6}$  2)  $z = \frac{5\pi}{3}$ B) Find  $(x, y)$  and  $Z$  given: 1)  $\alpha = 240^\circ$  2)  $\alpha = 120^\circ$ C) Find  $Z$  and  $\alpha$  given: 1)  $(-1, 0)$  2)  $\left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$ **Extra Credit** ----- 5 pts -----

If the chances of rain are 40 percent on Saturday and 20 percent on Sunday, what is the chance that it will rain during the weekend?