**Honors Trigonometry**
Copy the original problem.
Convince *me* that **you** understand the concept.
***No Decimal Fractions. No Calculators.***

Name _____

Per _____ Date _____

# Chapter 1 Exam

**I** Define *Absolute Value*. ( 5 pts )

**II** Given: $f(x)=\dfrac{x+2}{x-3}$ and $g(x)=\dfrac{2}{x+3}$ ( 5 pts ea )

A) Properly state the domain for each of $f(x)$ and $g(x)$.

B) $b(x) = f(x)+g(x)$ Determine the **domain only** for $b(x)$.

C) $c(x) = \dfrac{g(x)}{f(x)}$. Determine the **domain only** for $c(x)$.

D) $d(x) = f\big(g(x)\big)$. Determine the **domain only** for $d(x)$.

E) $e(x) = \sqrt{f(x)+g(x)}$. Determine the **domain only** for $e(x)$.

F) Find the **formula only** for $g\big(f(x)\big)$.

**III** Solve for $x$. Graph solution on a **well labeled** number line. ( 10 pts ea )

A) $\dfrac{1}{3x-2}<4$ B) $\dfrac{|x-2|}{|x+3|}\geq 1$ C) $\dfrac{-2x}{x+2}=x+2$

**IV** Write as a piece-wise function: $f(x)=|2x+1|-|3-x|$ . ( 10 pts)

**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) $z=\dfrac{\pi}{3}$ 2) $z=\dfrac{5\pi}{6}$

B) Find ( x , y ) and $Z$ given: 1) $\alpha = 135°$ 2) $\alpha = 300°$

C) Find $Z$ and $\alpha$ given: 1) $\left(\dfrac{-1}{2},\dfrac{-\sqrt{3}}{2}\right)$ 2) $\left(\dfrac{-\sqrt{2}}{2},\dfrac{-\sqrt{2}}{2}\right)$

**EXTRA CREDIT ..... 5 pts .....**

Given: $\begin{cases} f(x)=\{(1,3),\ (2,4),\ (3,1),\ (4,2)\} \\ g(x)=\{(1,4),\ (2,3),\ (3,2),\ (4,5)\} \\ h(x)=\{(1,2),\ (2,3),\ (3,1),\ (4,4)\} \\ k(x)=h\big(g\big(f(x)\big)\big) \end{cases}$ . Write the coordinate pairs which make up the function $k(x)$.