Calculus Pre-Test a   Name __Key__   Pd __
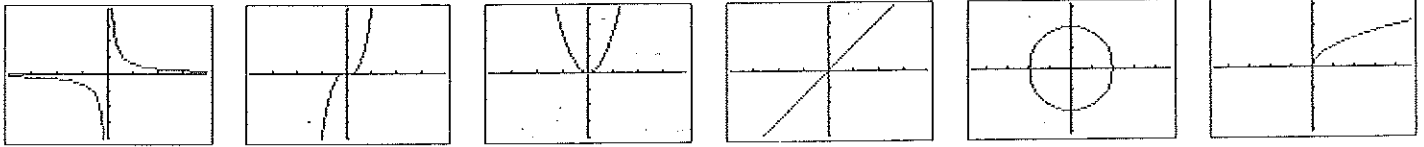
This side: NO CALCULATOR

PART 1: State the parent function for each graph shown below

1. $\frac{1}{x}$ 2. x^3 3. x^2 4. x 5. $x^2+y^2=r^2$ 6. $\sqrt{x}$

PART 2: Consider the function $f(x) = \dfrac{-9}{x-5}$

7. What is the parent function? __$\frac{1}{x}$__

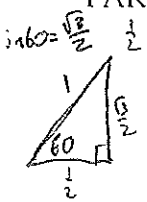8. State the Domain: __$D: \{R \mid x \neq 5\}$__

9. Where are the potential vertical asymptotes? __$x = 5$__

10. Are they asymptotes or holes? How do you know?
    yes   cannot get rid of it.

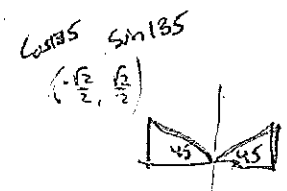11. Do any horizontal asymptotes exist? Where? __$y = 0$__

12. State the end behavior as x→∞ __$y \to 0$__

Cos135 Sin135
$\left(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

PART 3: STATE THE FOLLOWING AS RADICALS

$\sin 60 = \frac{\sqrt{2}}{2}$ $\frac{1}{2}$

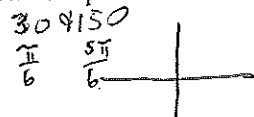13. Sin 60 = __$\frac{\sqrt{3}}{2}$__   14. Cos 135 = __$\frac{-\sqrt{2}}{2}$__

15. Convert 135 degrees to radians: __$\frac{3}{4}\pi$__

16. State 2 radians between 0 and 2π in which the sine is equal to ½
    $30 \& 150$
    $\frac{\pi}{6}$ $\frac{5\pi}{6}$

PART 4: FIND THE ZEROS FOR THE QUADRATIC

$\frac{d}{360} = \frac{r}{2\pi}$

$\frac{270\pi}{360} = \frac{3}{4}\pi$

17. $f(x) = x^2 - 2x - 8$ $\dfrac{2 \pm \sqrt{4-4(1)(-8)}}{2} = \dfrac{2 \pm \sqrt{36}}{2}$ $\dfrac{2+6}{2} = 4$ $\dfrac{2-6}{2} = -2$

PART 5: Line AB has points A = (2,1) and B = (4, -7)

18. State the slope of $\overrightarrow{AB}$: $\dfrac{-7-1}{4-2} = \dfrac{-8}{2} = -4$

19. State the equation of AB in point slope form: $y-1 = -4(x-2)$ or $y+7 = 4(x-4)$

20. State the equation of AB in y = mx + b form: $y = -4x+8+1$
    $y = -4x+9$

Draw a unit circle **from memory** showing all 16 order pairs with degrees and radians for each.

see your unit circle

Questions:

The x value of the points on the unit circle represents the ___cos___ trig function.

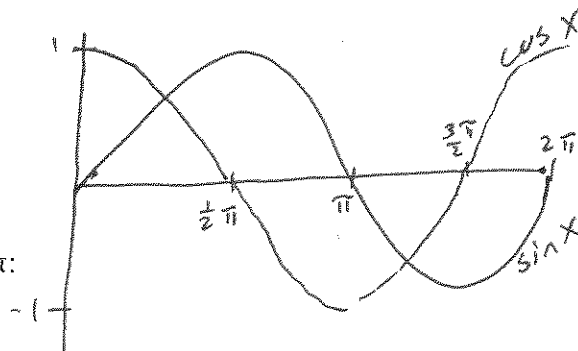The y value of the points on the unit circle represents the ___sin___ trig function.

Sin x / cos x can be rewritten as ___tan x___

1 / sin x is the same as ___csc x___

1 / csc x is the same as ___sec x___

1 / tan x is the same as ___cot x___

Draw a Sine curve from 0 to 2π:

Draw a Cosine curve from 0 to 2π: