Math 3 NCFE PRACTICE #5

1. If $f(x) = 2x^2 - x + 4$ AND $g(x) = x^3$. What is the difference in the values of $f(-4)$ AND $g(-3)$?

2. FIND the <u>ZEROS</u> for $f(x) = 5x^3 + 2x^2 - 45x - 18$

A) $4, -4, -2/3$
B) $3, -3, -2/3$
C) $4, -4, -2/5$
D) $3, -3, -2/5$

3. <u>Simplify</u>: $\dfrac{5x^2 + 11x - 12}{x + 3}$

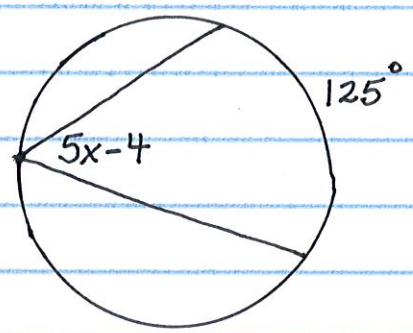
4. FIND the <u>center</u> AND <u>radius</u> of $x^2 - 8x + y^2 - 2y + 3 = 0$.

5. <u>How long</u> would it take \$6500 to <u>double</u> if compounded continuously @ 2.37%?

A) 32.5 yrs
B) 29.3 yrs
C) 18.6 yrs
D) 26.7 yrs

6. A sprinkler is located at the edge of a lawn and rotates 80° degrees. If the sprinkler shoots out water 17 feet, what is the <u>area</u> of the lawn that is watered?

7. <u>Solve for x</u>:



8. <u>Factor</u>:

$6x^3 + 21x^2 - 10x - 35$

9. <u>Simplify</u>: $\dfrac{x^2}{x^2-25} \cdot \dfrac{(x+5)}{3x^2}$

10. During a particular year, taxes owed are determined by the following piecewise below. <u>What are the taxes for a \$35,000 income?</u>

$$T(x) = \begin{cases} 0.15x & \text{for } 0 \le x < 17{,}900 \\ 0.28(x-17{,}900) + 2685 & \text{for } 17{,}900 \le x < 43{,}250 \\ 0.31(x-43{,}250) + 9783 & \text{for } x \ge 43{,}250 \end{cases}$$