Math 2 Name: _____
Module 0, Day 8 Date: _____ Period: ____

Practice Worksheet

Show all your work and reasoning. Use a pencil and highlight your answers.

Simplify each expression.

1a) $x(3x - 4)$	2a) $2a(3a - 7)$	3a) $4g(g - 8)$
1b) $-7(3x - 4)$	2b) $8(3a - 7)$	3b) $-9(g - 8)$
1c) $x(3x - 4) - 7(3x - 4)$	2c) $2a(3a - 7) + 8(3a - 7)$	3c) $4g(g - 8) - 9(g - 8)$

4. Since $(3x - 4)$ is a common factor in #1c above, we can rewrite the expression as $(x - 7)(3x - 4)$. This means that each term in the 1st set of parentheses needs to be multiplied by each term in the 2nd set of parentheses, or $x(3x - 4) - 7(3x - 4)$. **Use this idea to multiply & simplify these products.**

a) $(x + 9)(x + 5)$	b) $(a - 5)(3a + 7)$	c) $(4d - 1)(d - 10)$
d) $(5h + 2)(4h - 6)$	e) $(2w - 7)(3w - 8)$	f) $(3x - 5)^2$

5. Some terms of a sequence are given. Fill in the missing numbers for an arithmetic sequence, then fill in the numbers for a geometric sequence. Show or explain your reasoning!

Arithmetic		972			36
Geometric		972			36

6. Joseph and Ricky are trying to see how can get the most followers on InstaSnap. On the first day, Joseph created his account he had 100 followers. His number of followers increased by 15 each day thereafter. On the first day Ricky created his account, he had five followers, and he doubles his number of followers each day after that. Let $d \rightarrow$ # of days and $f(d) \rightarrow$ the number of followers

a) Write recursive equations for Joseph and Ricky.

Joseph:

Ricky:

b) Write explicit equations for Joseph and Ricky.

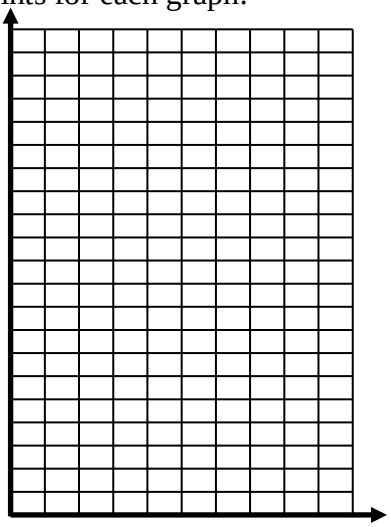
Joseph:

Ricky:

Work for Joseph:

Work for Ricky:

c) Graph the number of followers for both boys. Be sure to show your work for how you found the points for each graph!



7. Solve each equation. Show your work!

a) $5^x = 625$

b) $3^x = \frac{1}{81}$

c) $8^x = 16$

d) $25^{x-2} = 125$

e) $49^{x+3} = 7$

f) $\left(\frac{1}{36}\right)^x + 1 = 217$