EMA **Name: _____**

Unit 3 Review – Solving & Linear Applications **Date: _____ Period: _____**

Solve.

1.) $2 + 5(4x - 3) - 5(x - 7) = 2(3x + 6) - 4x$

2.) $\frac{3}{4x-1} = \frac{5}{2x+3}$

3.) $\frac{3(a-b)}{c} = 4$; **Solve for *a*.**

4.) $\frac{1}{6}x - \frac{3}{2} = \frac{5}{12}x - 2$

5.) **Mr. Bruell loves picking apples. Back in his prime, he could pick 732 in 1 ½ hours. That's right!! 732 apples in 1 hour and 30 minutes!!! If that is the case, how many could he pick if he spent 8 hours picking apples?**

6.) **Write an equation in *slope – intercept form* given the line passes through the points $(-1, -3)$ and $(-2, 6)$.**

7.) **Write an equation in *slope-intercept form* that is *parallel* to your equation in #6 and passes through the point $(2, -7)$.**

8.) **Write an equation in *slope-intercept form* that is *perpendicular* to your equation in #6 and passes through the point $(-9, 1)$.**

9.) **Graph each equation from numbers 6, 7, and 8. Label each one respectively A, B, and C.**

Equation from #6: _____. Label A

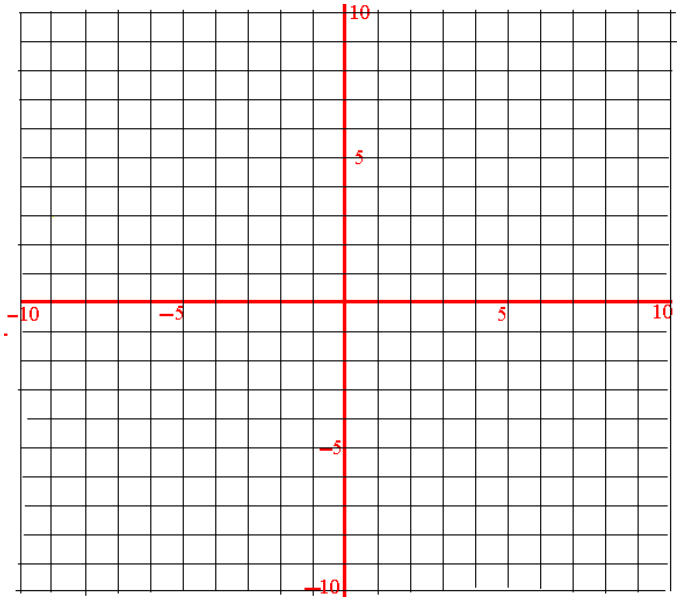
$m =$ _____, $b =$ _____

Equation from #7: _____. Label B

$m =$ _____, $b =$ _____

Equation from #8: _____. Label C

$m =$ _____, $b =$ _____



10.) **Mr. Falinski is looking to rent a motorcycle so of course he visits Mr. Lee's House of Choppers. Mr. Lee tells him if he rents a bike for 5 months it will be $475. If he rents it for 9 months it will cost $695. Set up an equation to model this situation then find out how much Mr. Falinski has paid after a year.**

(A) **Find a linear equation for the total cost. Let *x* = the number of months and *y* = the total cost.**

(B) **Using a complete sentence, explain what the slope means in terms of the content.**

_____

_____

(C) **How much will the total cost be if he rents the bike for 1 ½ years?**

(D) **How many months will he have the motorcycle if the total cost is $1,300.**

(E) **Write a linear equation that is parallel to your linear equation in (A) where a customer rents for 4 months at a total cost of $720.**

(F) **Write a linear equation that is perpendicular to your linear equation in (A) where a customer rents for 55 months at a monthly cost of $5000.**