2A Solving Equations for a Variable Name: _____Per: _____

SHOW YOUR WORK FOR FULL CREDIT. NO WORK, NO CREDIT. NO WORK IN PEN.

Objectives: Manipulate equations by solving for different variable.

Just steps to solve equations using mathematical properties. Due: Sept 14th / Sept 17th

1. The *reflexive property* states that $a = a$. Give an example of the reflexive property with numbers. _____
2. The *distributive property of multiplication over addition* states that $a(b + c) = ab + ac$. Give an example of the distributive property of multiplication over addition. _____
3. The *addition property of equality* states that if $a = c$, then $a + b = c + b$. Give an example of the addition property of equality with numbers. _____
4. The *multiplication property of equality* states that if $a = c$, then $ab = cb$. Give an example of the multiplication property of equality with numbers. _____

Solve for "y" so that the following equations are in **slope-intercept form** ($y = mx + b$). To the right of each problem, **explain each of your steps**. Use as many lines as needed. **Use the properties above if possible**. (The first one is done for you.)

EX. $8x + 2y = -16$ Given _____

$-8x = -8x$ Reflexive Property _____

$2y = -8x - 16$ Additive Property of Equality

$\div 2 = \div 2$ Reflexive Property _____

$y = -4x - 8$ Multiplication Prop of Equality

_____

5. $\frac{1}{2}x + 2y = 22$ *_____

*_____

*_____

*_____

*_____

*_____

6. $x + 2y = 4x$ *_____

*_____

*_____

*_____

*_____

*_____

7. $3(x - y) = 15$ *_____

*_____

*_____

*_____

*_____

*_____

8. $-5x - \frac{1}{2}y = 10$ _____

*_____

*_____

*_____

*_____

*_____

9. $4y + 2x + 2y = 12$* _____

*_____

*_____

*_____

*_____

*_____

10. For #8 above, list:

a) Slope: _____

b) y-intercept: _____

c) x-intercept: _____

11. For #9 above, list:

a) Slope: _____

b) y-intercept: _____

c) x-intercept: _____

Solve the following for x.

12. $4(x-y)=2(6+x)$ 13. $8x-2y+x+5=23-5y$ 14. $-7x-4y=15+2(3y-x)$

Solve for the given variable. (Hint: your answers should not repeat.)

15. $4(2x+y)=-32$, **solve for y** 16. $4(2x+y)=-32$, **solve for x**

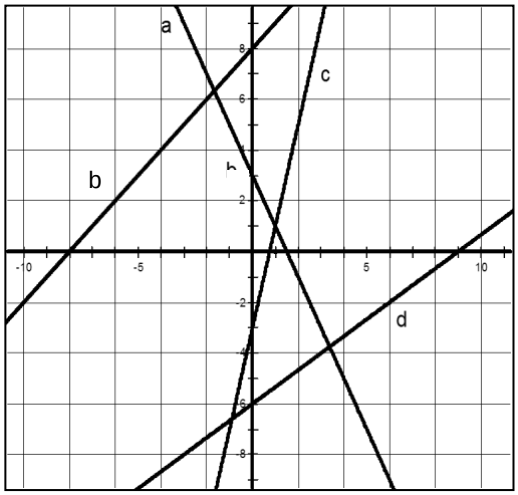
17. $3m-p=5(2-p)$, **solve for p** 18. $3m-p=5(2-p)$, **solve for m**

19. $4(r-d)=8$, **solve for d** 20. $4(r-d)=8$, **solve for r**

Match the equation of the lines below to those graphed to the right. **Justify and explain** how you matched the equations.

21. $-2x+3=y$ 22. $4x-y=3$

23. $2x-3y=18$ 24. $3x-3y=-24$



Extra Credit: Find the equation for a line when the **x-intercept = 6** and passes through the point (7, 8).