#1 Algebra 2A Worksheet Day1

Name: _____

I. Use the order of operations to simplify the following problems. Show your work.

1. $15 \div 3 \cdot 5 + 12 \div 6$

$5 \cdot 5 + 12 \div 6$

$25 + 12 \div 6$

$25 + 2$

$\boxed{27}$

2. $25 - 10^2 + 150 \div 3$

$25 - 100 + 150 \div 3$

$25 - 100 + 50$

$-75 + 50$

$\boxed{-25}$

3. $3 + 2\left[40 - (1+5)^2\right]$

$3 + 2[40 - (1+5)^2]$

$3 + 2[40 - (6)^2]$

$3 + 2[40 - 36]$

$3 + 2[4]$

$3 + 8$

$\boxed{11}$

4. $12 + \left[(-6)^2 - 4^2\right]^2 - 7$

$12 + [36 - 16]^2 - 7$

$12 + [20]^2 - 7$

$12 + 400 - 7$

$\boxed{405}$

5. $\dfrac{3 + \left[8 - (2+3)^2\right]}{10 \div 2}$

$\dfrac{3 + [8 - 5^2]}{10 \div 2}$

$\dfrac{3 + [8 - 25]}{10 \div 2}$

$\dfrac{3 + 17}{10 \div 2}$ $\boxed{-\frac{14}{5}}$

6. $\dfrac{4 + \left[8 - (5+3)^2\right]}{12 \div 3}$

$\dfrac{4 + [8 - (8)^2]}{12 \div 3}$

$\dfrac{4 + [8 - 64]}{12 \div 3}$

$\dfrac{4 + -56}{12 \div 3} = \dfrac{-52}{4} = \boxed{-13}$

II. Find the slope of the line passing through the given points or equation. $m = \dfrac{y_2 - y_1}{x_2 - x_1}$

7. $(6,2)$ and $(4,1)$ (x_1, y_1 and x_2, y_2)

$m = \dfrac{1-2}{4-6}$

$\boxed{m = \frac{1}{2}}$

8. $(-1,5)$ and $(4,5)$

$(4,5)$

$m = \dfrac{5-5}{4-1}$

$\boxed{m = \frac{0}{5} = 0}$

9. $(2,-6)$ and $(-2,-1)$

$(-2,-1)$

$m = \dfrac{-6+1}{2+2}$

$\boxed{m = \frac{-5}{4}}$

10. $(6,-3)$ and $(6,4)$ (x_1, y_1 and x_2, y_2)

$m = \dfrac{4+3}{6-6}$

$\boxed{m = \frac{7}{0} \rightarrow \text{undefined}}$

III Simplify each **expression**.

11. $3(x-5y) - 2(5x-4y)$

$3x - 15y - 10x + 8y$

$\boxed{-7x - 7y}$

12. $x(3-y) - 5x(y+6)$

$3x - xy - 5xy - 30x$

$\boxed{-27x - 6xy}$

Simplify each express. Then evaluate the expression for the given values of the variables.

13. $-x(2x^2 + 5x - 1)$ for $x = -3$

$-2x^3 - 5x^2 + x$

$-2(-3)^3 - 5(-3)^2 + (-3)$ $\boxed{6}$

14. $(2x-1)^2 - 5x + x^2$ for $x = -3$

$4x^2 - 4x + 1 - 5x + x^2$

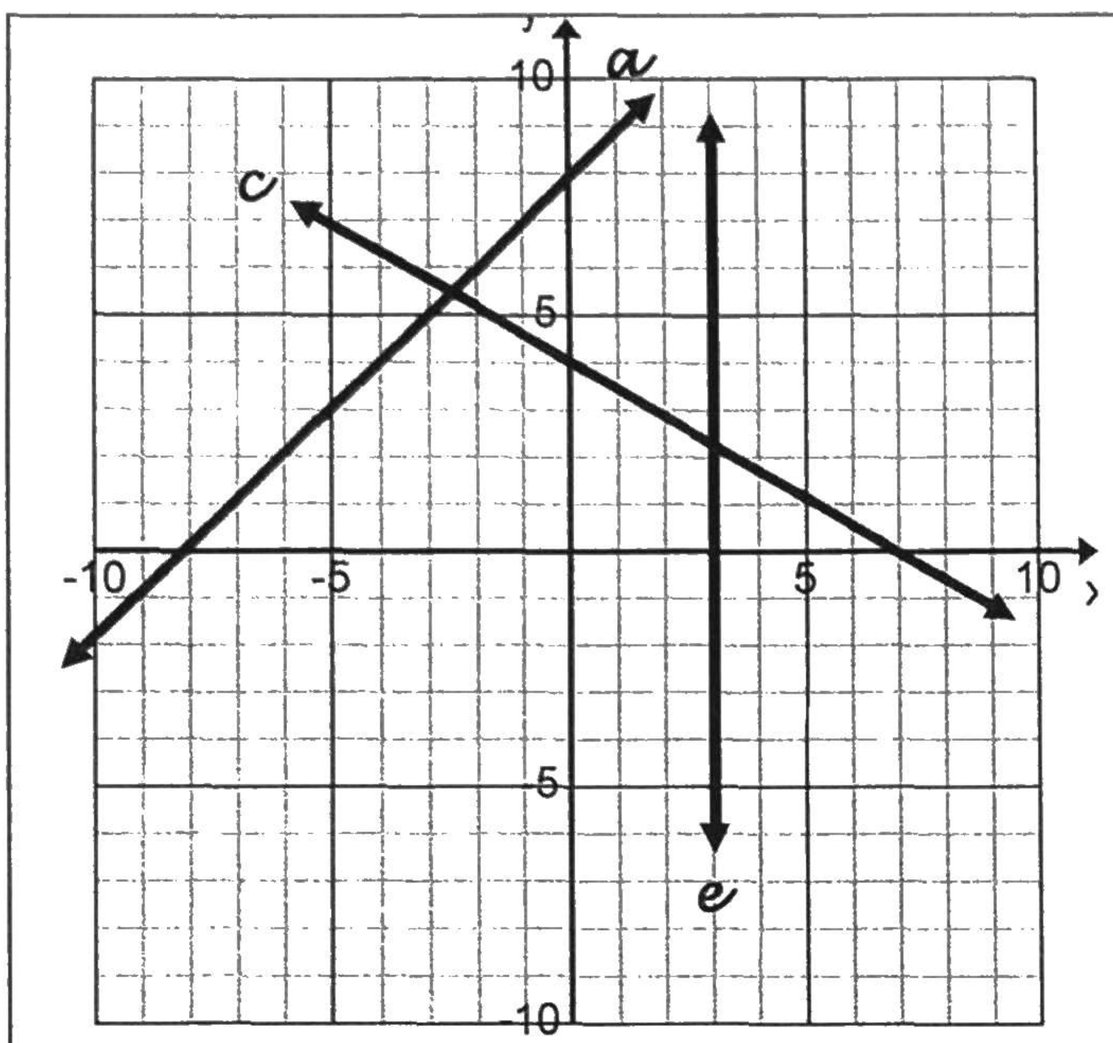
$5x^2 - 9x + 1$

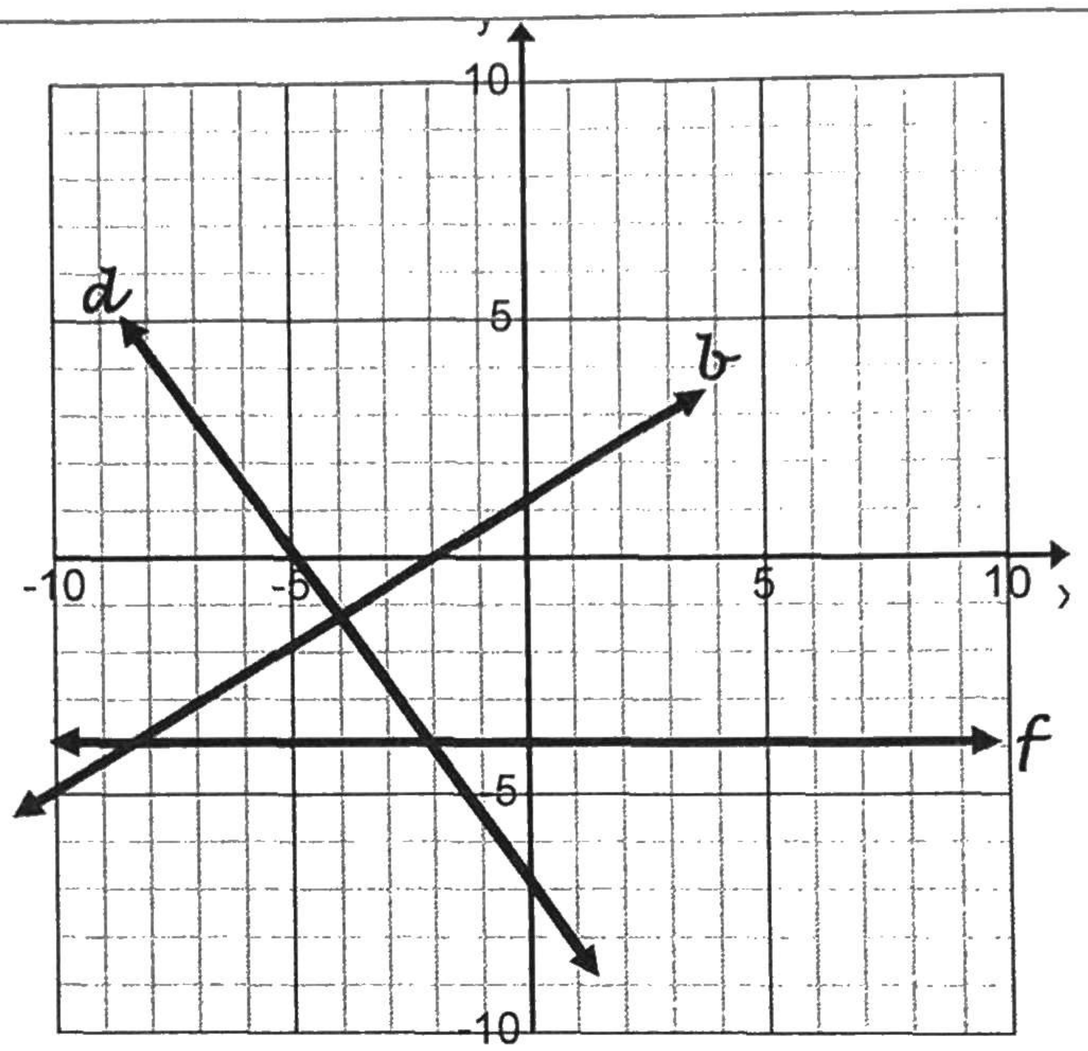
$5(-3)^2 - 9(-3) + 1$ $\boxed{73}$

IV Algebraic Translations

15. Thirty-two is 7 less than 3 times a number. $32 = 3x - 7$	16. Twice Beth's daily pay is the same as her daily pay increased by $45. $2B = B + 45$	17. Thrity-two pounds less than twice Jane's weight is 270 pounds. $2j - 32 = 270$	18. A number decreased by 45 is the same as 3 times the number. $n - 45 = 3n$

V. Name the **x- and y- intercepts** AND the **slope** for each of the lines.





Find the x- & y- intercept and slope for each line.

19. **line *a***

x-intercept	y-intercept	slope
$(-8, 0)$	$(0, 8)$	$\frac{+8}{+8} = 1$

21. **line *c***

x-intercept	y-intercept	slope
$(7, 0)$	$(0, 4)$	$\frac{-4}{+7} = \frac{-4}{7}$

23. **line *e***

x-intercept	y-intercept	slope
$(3, 0)$	none	$\frac{+3}{0}$ = undefined

Find the x- & y- intercept and slope for each line.

20. **line *b***

x-intercept	y-intercept	slope
$(-2, 0)$	$(0, 1)$	$\frac{+1}{+2} = \frac{1}{2}$

22. **line *d***

x-intercept	y-intercept	slope
$(-5, 0)$	$(0, -7)$	$\frac{-7}{+5} = \frac{-7}{5}$

24. **line *f***

x-intercept	y-intercept	slope
none	$(0, -4)$	$\frac{0}{-4} = 0$

Answer Bank

I	-13	11	27	-2.8	405	-25			
II	-4	-5/4	0	0	Undefined	Undefined	1/2		2/3
III	$-7x-7y$		$-27x-6xy$		73	6			
IV	$2x-32=270$		$2x=x+45$		$32=3x-7$		$x-45=3x$		
V	x:none Y:-4	x:7 Y:4	x:-8 Y:8	x:-2 Y:1	x:-5 Y:-7	x:3 Y:none	-1/2 1	1/2 -7/5	0 Undef.