ALGEBRA 1 REVIEW Name: Ms. Delgado

Please complete without calculator. SHOW WORK. A list of answers will not be accepted.

SOLVING FOR "X"

1. $2x-5+3x-10=90$

$5x-15=90$
$+15 \quad +15$
$\frac{5x}{5}=\frac{105}{5}$ → $x=21$

2. $2(x-2)=3(2x-3)$

$2x-4=6x-9$
$-2x+9 \quad -2x+9$
$\frac{5}{4}=\frac{4x}{4}$ → $x=\frac{5}{4}$

3. $\frac{2x+3}{3}=\frac{x+1}{2}$

$2(2x+3)=3(x+1)$
$4x+6=3x+3$
$-3x-6 \quad -3x-6$
$x=-3$

4. $3x-40+7x+15=180$

$10x-25=180$
$+25 \quad +25$
$\frac{10x}{10}=\frac{205}{10}$ → $x=\frac{41}{2}$

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

$x-2-2x-8=6x-9$
$-x-10=6x-9$
$+x+9 \quad +x+9$
$-1=7x$ → $-\frac{1}{7}=x$

6. $\frac{3}{x-1}=\frac{5}{x}$

$3(x)=5(x-1)$
$3x=5x-5$
$-5x \quad -5x$
$\frac{-2x}{-2}=\frac{-5}{-2}$ → $x=\frac{5}{2}$

SOLVING BY FACTORING

7. $x^2-5x-14=0$

$(x+2)(x-7)=0$
$x+2=0 \quad x-7=0$
$x=-2 \quad x=7$

8. $x^2-2x=24$

$x^2-2x-24=0$
$(x-6)(x+4)=0$
$x-6=0 \quad x+4=0$
$x=6 \quad x=-4$

9. $2x^2-5x-3=0$

$(2x+1)(x-3)=0$
$2x+1=0 \quad x-3=0$
$2x=-1 \quad x=3$
$x=-\frac{1}{2}$

	$2x$	$+1$
x	$2x^2$	$1x$
-3	$-6x$	-3

$-5x$, -6, $-6 \cdot 1$

10. $2x^2+7x+5=0$

$(2x+5)(x+1)=0$
$2x+5=0 \quad x+1=0$
$2x=-5 \quad x=-1$
$x=-\frac{5}{2}$

	$2x$	$+5$
x	$2x^2$	$5x$
$+1$	$2x$	5

$7x$, 10, $2 \cdot 5$

LINEAR EQUATIONS

Write the equation of the line through the given points.

11. $(0,10)$ and $(-3,4)$

$x\ y \qquad x_2\ y_2$

$m = \frac{4-10}{-3-0} = \frac{-6}{-3} = 2$

$y - 10 = 2(x-0)$

$y - 10 = 2x$

$y = 2x + 10$

12. $(3,2)$ and $(6,2)$

$m = \frac{2-2}{6-3} = \frac{0}{3} = 0$

$y - 2 = 0(x-3)$

$y - 2 = 0$

$y = 2$

13. Find the slope of the line. $2x - 3y = 9$

$-3y = -2x + 9$

$y = \frac{2}{3}x - 3$

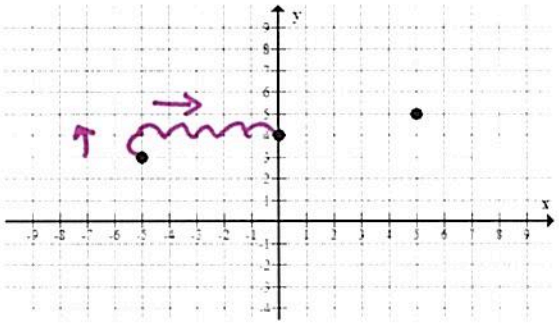
↑ slope

$m = \frac{2}{3}$

14. Write a linear equation through the points $(-5,3)$, $(0,4)$, and $(5,5)$.

$m = \frac{1}{5} \qquad b = 4$

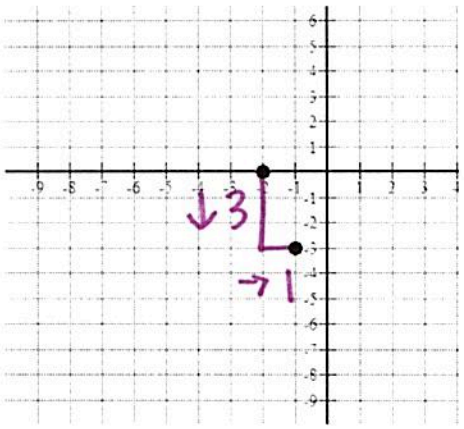
$y = \frac{1}{5}x + 4$



15. Write a linear equation through the points $(-2,0)$ and $(-1,-3)$.

$m = \frac{-3}{1} = -3 \qquad b = -6$

$y = -3x - 6$



ORDER OF OPERATIONS

Simplify the following expressions and write an equivalent expression.

16. $(3x-4y)^2$

3X-4Y

	3X	-4Y
3X	$9X^2$	$-12XY$
-4Y	$-12XY$	$16Y^2$

$9X^2-24XY+16Y^2$

17. $5x-2(4x-1)$

$5X-8X+2$

$-3X+2$

18. $(x+2)^2-2(x-1)$

$X^2+2X+2X+4-2X+2$

X^2+2X+6

19. $3x-4x(x+6)+11$

$3X-4X^2-24X+11$

$-4X^2-21X+11$

20. $5x-(4x+5)(2x-3)$

$5X-(8X^2-12X+10X-15)$

$5X-8X^2+12X+10X+15$

$-8X^2+7X+15$

21. $(x+3)(x-4)+2(x-4)$

$X^2-4X+3X-12+2X-8$

X^2+X-20

22. $(2x-1)(x-3)$

$2X^2-6X-X+3$

$2X^2-7X+3$

23. $(2x-1)(x-3)+2x-6$

$2X^2-6X-X+3+2X-6$

$2X^2-5X-3$

24. $x(3x-2)-7(x+4)$

$3X^2-2X-7X-28$

$3X^2-9X-28$