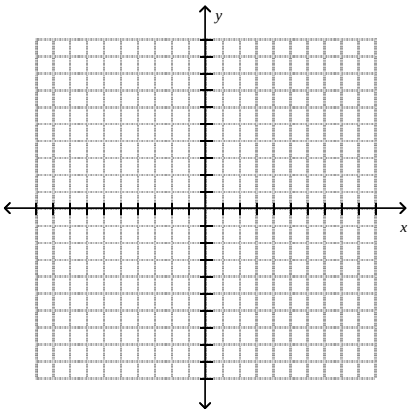
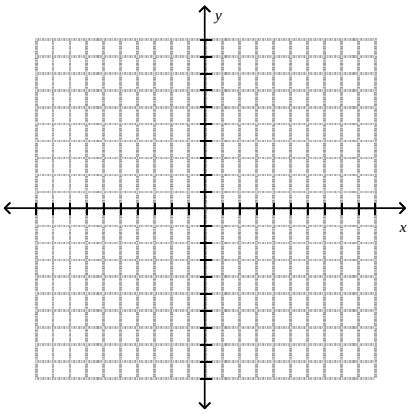
+Algebra 2/Trig Problem Set #1 Name:_____

Graph each equation or inequality.
Identify the slope and y-intercept.

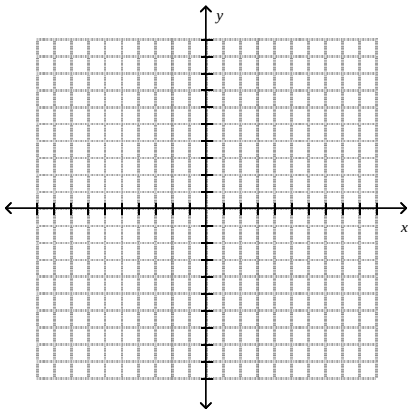
1) $y = \frac{1}{2}x - 4$



2) $y = -3x + 4$

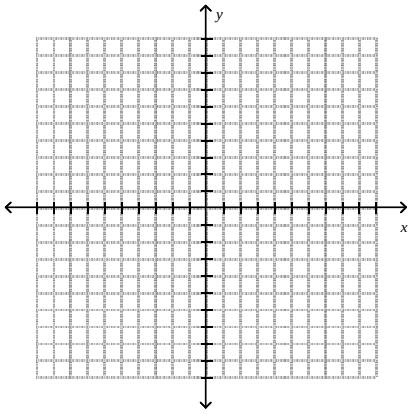


3) $3x - 6y = 18$

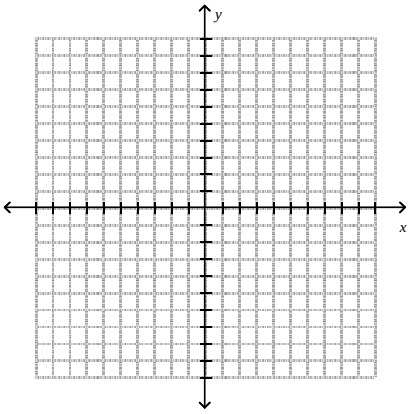


Use the x- and y-intercepts.

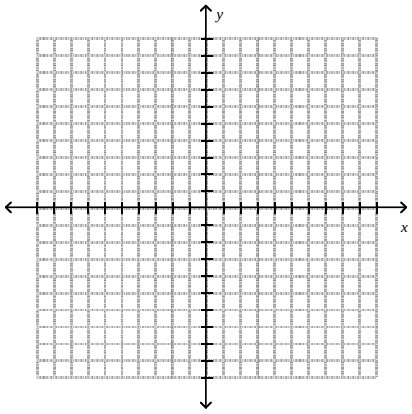
4) $-2x + 3y = 9$



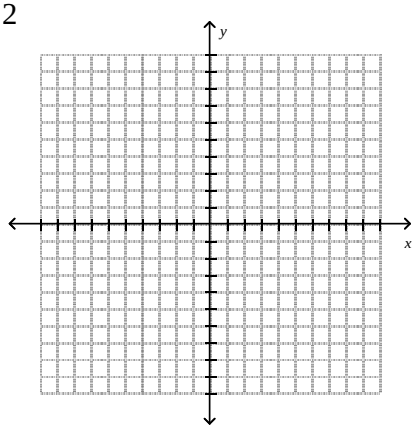
5) $2x - 6y = 12$



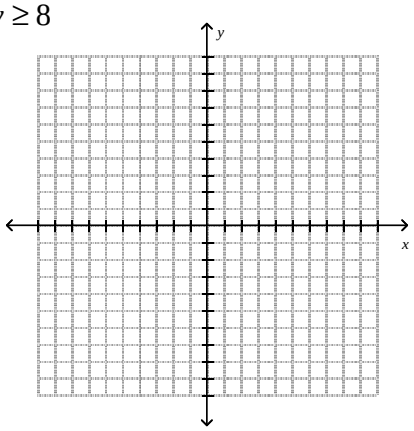
6) $y = \frac{2}{3}x - 4$



7) $y < 3x - 2$



8) $3x + 2y \geq 8$



Write the equation of the line using the given information. Solve for y regardless of the method used!

Use Slope-Intercept Form

9) m = – 1, (4, 6)

10) slope: 0, (– 6, 2)

11) $(-7, 0), (-9, 3)$

Use Point-Slope Form

12) $(1, 3), (7,4)$

13) $(-2, 3), (-2, -5)$

14) $m = \frac{1}{2}, (-4, 5)$

15) Write an equation of the line parallel to the line $y = 2x - 5$ and passes through the point $(-4, 8)$.

16) Write an equation of the line perpendicular to the line $2x - 5y = 10$ and passes through the point $(-5, 7)$.

+Algebra 2/Trig Problem Set #2 Name:_____

Solve the equation. Then, check your answer!

1) $x-3=-7$

2) $-2x=14$

3) $\frac{4}{3}f=-16$

4) $3x-3=15$

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

6) $\frac{x}{-2}+3=7$

7) $-2+4x-6x+6=-16$

8) $40=14+2(4g-3)$

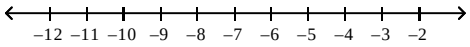
9) $-3z-1=17+3z$

10) $4x-12=-2(5-3x)$

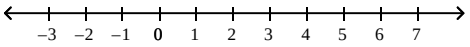
13) Dan purchased DVDs from a website. Each DVD costs $11, and the shipping fees are $6.95. Dan paid a total of $50.95. How many DVDs did he buy?

Solve and graph each inequality.

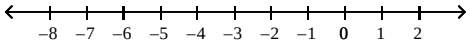
14) $x + 3 < -4$



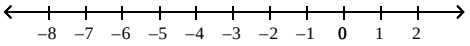
15) $-2x \geq -6$



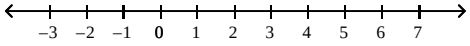
16) $4 > -3x - 14$



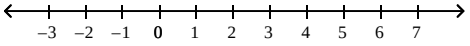
17) $3(y + 1) < 3y + 7$



18) $-4 < -3x + 8 < 11$



19) $9s - 6 < 12$ or $3s + 1 > 13$



Solve each equation.

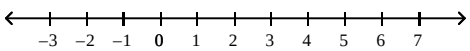
20) $|2c + 5| = 21$

21) $|2x - 4| + 12 = 10$

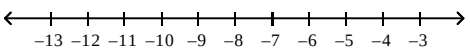
22) $2|x - 3| = 4$

Solve and graph each inequality.

23) $|3f - 9| + 5 > 11$



24) $5|d + 8| - 7 < 13$



+Algebra 2/Trig Problem Set #3 Name:_____

First, write the polynomial in standard form. Then, identify the degree, leading coefficient, and classify by the number of terms.

1) $-4+5y^2$

2) $-6-8x^3+7x$

Find the sum or difference.

3) $\left(x^2-3x+5\right)+\left(11x+2x^2-1\right)$

4) $\left(8y^3-7y^2+y\right)-\left(-5y-9y^2+7\right)$

Find the product.

5) $3x^2\left(x^3-5x^2+6x-2\right)$

6) $(2x-5)(x+8)$

7) $(x+3)(-2x^2+5x-1)$

8) $(2x-1)(x+2)(x-6)$

9) $(3x-4)(3x+4)$

10) $(5x+1)^2$

11) $(2x-5)(2x+5)$

12) $(3x-4)^3$

13) $(3x+2)^3$

+Algebra 2/Trig Problem Set #4 Name:_____

Factor the trinomial. (Take out a GCF first, if possible)

1) x^2+8x+7

2) $x^2-7x+10$

3) $x^2-12x-13$

4) $x^2+10x+25$

5) $x^2+13x+36$

6) $x^2-5x-24$

7) $-x^2-3x+28$

8) $2x^2+15x+7$

9) $5x^2-18x-8$

10) $-3x^2-17x-10$

11) $10x^2-26x+12$

12) $-4x^2+6x+4$

13) $16x^2-40x+25$

14) $4x^2-9$

15) $8x^2+24x+18$

16) $50x^2-18$

17) x^3-x

18) $3x^2-18x+27$

+Algebra 2/Trig Problem Set #5 Name:_____

Simplify each expression.

1) $(3d^{-2})^5(5d^3)^{-4}$

2) $(-1a^5b^2)^4(6a^{-4})$

3) $(-2d^3e^3)(6d^4e^{-7})$

4) $\dfrac{6x^{-2}y^6}{(3xy^3)^2}$

5) $\left(3f^4g^{-3}\right)^3\left(f^2g^{-2}\right)^{-1}$

6) $(4x^4)^3(2xy^3)^2$

7) $(a^3b^4)^{-2}(a^{-3}b^{-5})^0$

8) $\dfrac{(3x^{-2}y^3)^{-2}}{(4yz^2)^{-4}}$

9) $\left(\dfrac{p^{-3}q^{-2}}{2q^{-3}r^5}\right)^4$

10) $\dfrac{x^7y^9z^{-3}}{y^7z^4x^8}$

11) $\left(\dfrac{5a^0b^4}{c^{-3}}\right)^{-2}$

12) $\dfrac{x^4y^{-8}z^{-2}}{x^{-1}y^6z^{-10}}$