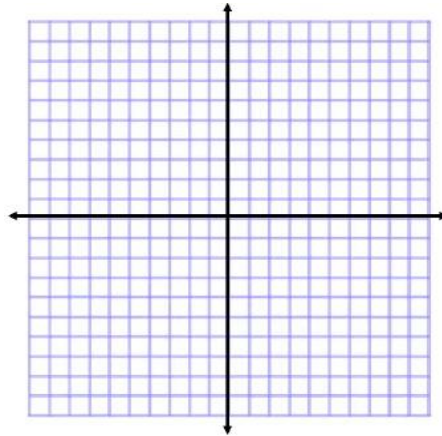


Pick out the slope and y-intercept for each equation and graph on the coordinate plane provided. (Three graphs per coordinate plane.)

1. $y = -\frac{2}{7}x + 3$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$

2. $y = 3x - 2$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$

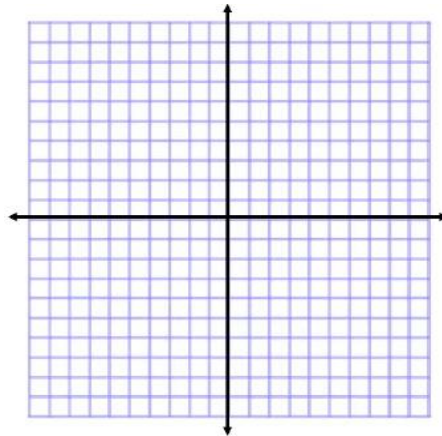
3. $y = .5x - 7$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$



4. $y = \frac{1}{3}x + 5$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$

5. $y = -2x$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$

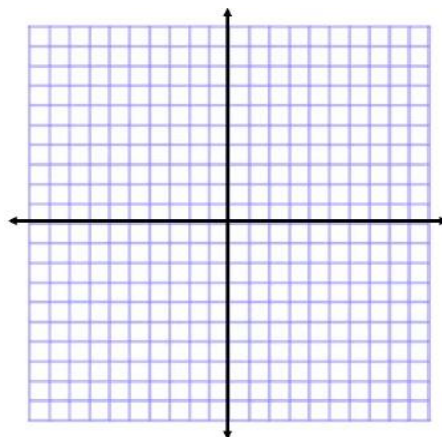
6. $y = \frac{2}{7}x - 6$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$



7. $y = x - 3$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$

8. $y = \frac{4}{3}x - 2$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$

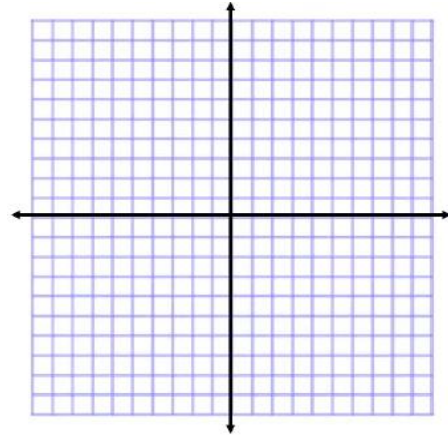
9. $y = -.75x + 5$; $m = \underline{\hspace{1cm}}$, $b = \underline{\hspace{1cm}}$



Graph each equation (special cases). Do two graphs per coordinate plane.

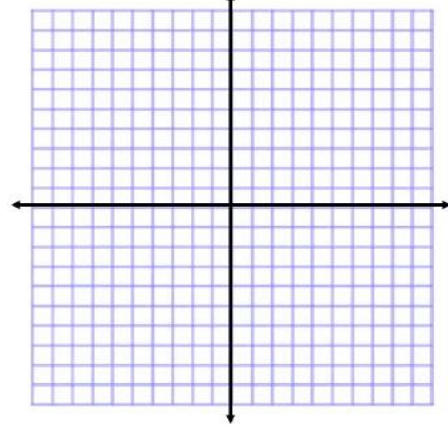
1. $y = 4$

2. $x = -1$



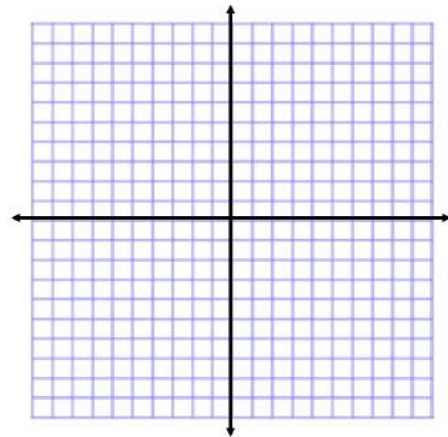
3. $y = -3$

4. $x = 5$



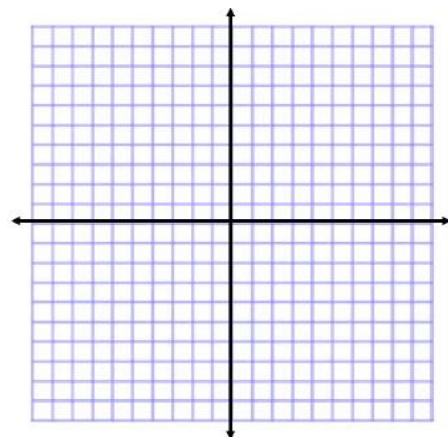
5. $x = -4$

6. $y = 7$



7. $x = -2$

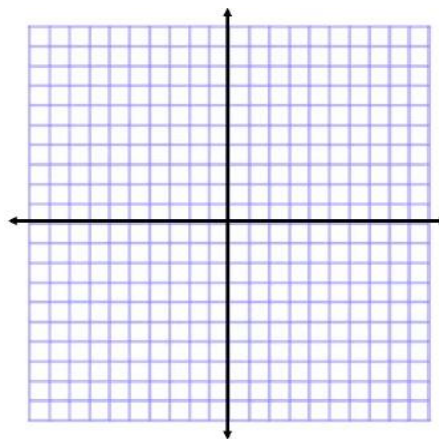
8. $y = 5$



Graph the following equations written in standard form by using intercepts. (Two graphs per coordinate plane.)

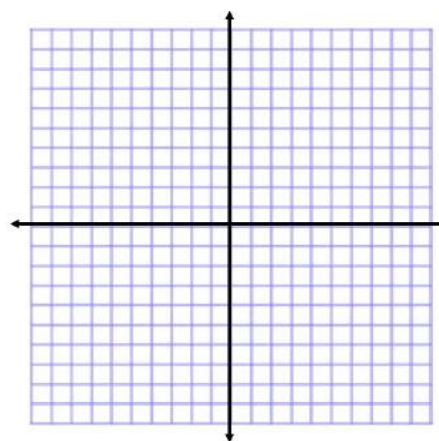
1. $4x - y = 6$

2. $-3x + 2y = 18$



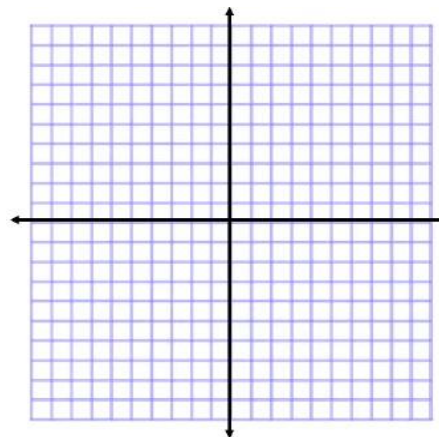
3. $5x + y = 9$

4. $7x - 3y = 21$



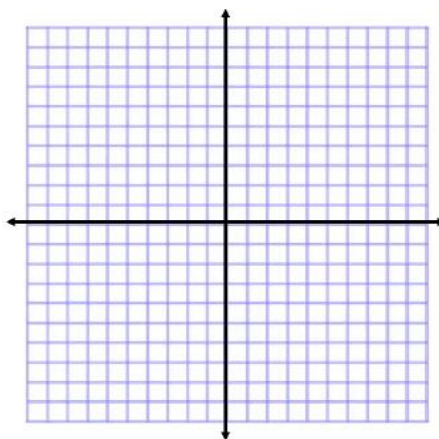
5. $2x + y = 8$

6. $11x - 33y = 99$



7. $10x - 5y = 25$

8. $5x + y = 8$



Rewrite the following equations in slope intercept form.

1. $-2x - 5y = -20$

2. $5x - 2y = 16$

3. $3x + 2y = -10$

4. $X - 4y = 12$

5. $7x - 4y = 12$

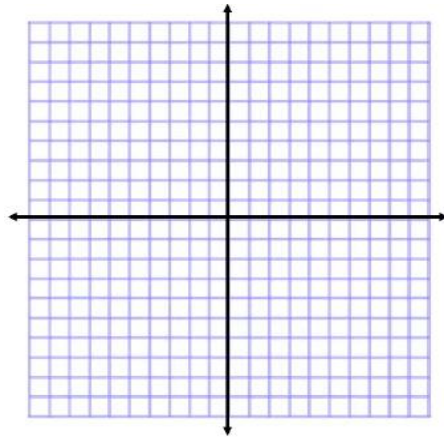
6. $-x + y = 11$

7. $5x + 2y = 14$

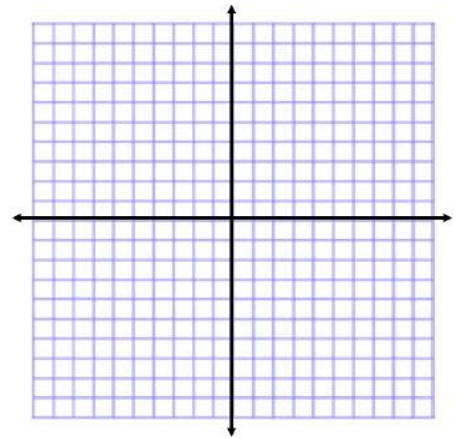
8. $8x - 6y = 18$

Graph each linear inequality. (REMEMBER...line and shading!)

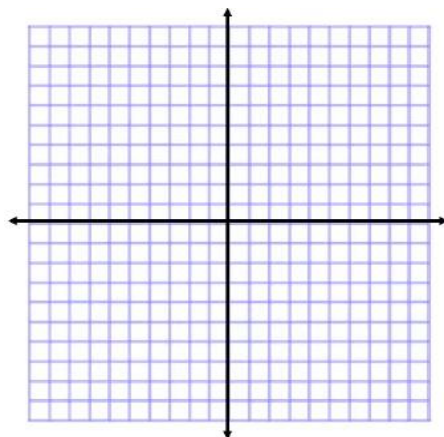
2. $y \leq \frac{8}{3}x - 7$



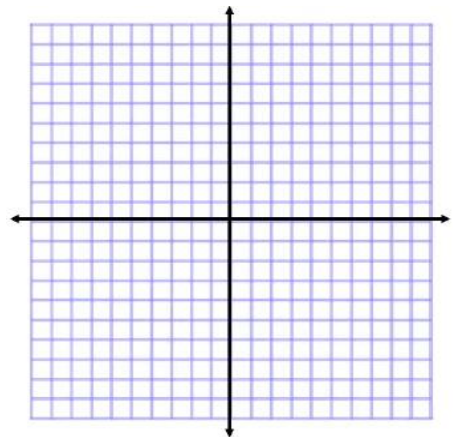
2. $y > x - 1$



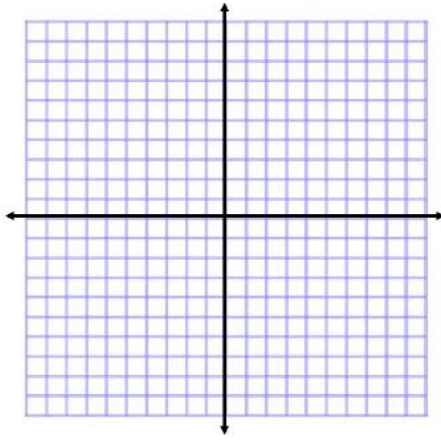
3. $y > -\frac{2}{5}x - 1$



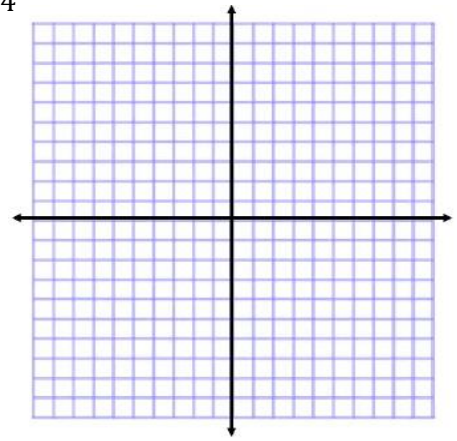
4. $y < -4x + 3$



5. $y < -4x + 3$

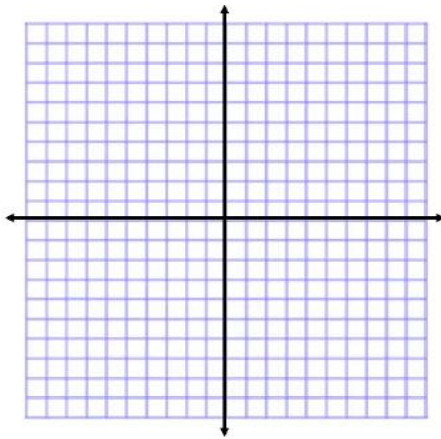


6. $y \geq -x + 4$

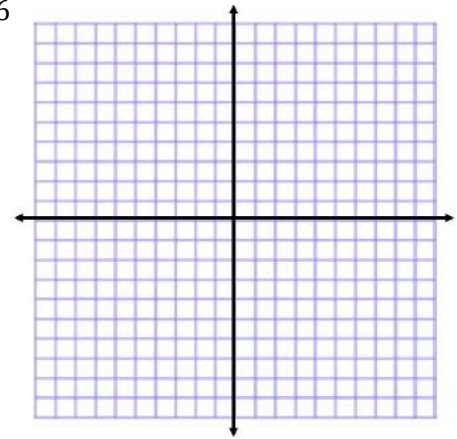


***** rewrite these next problems into slope intercept first*****

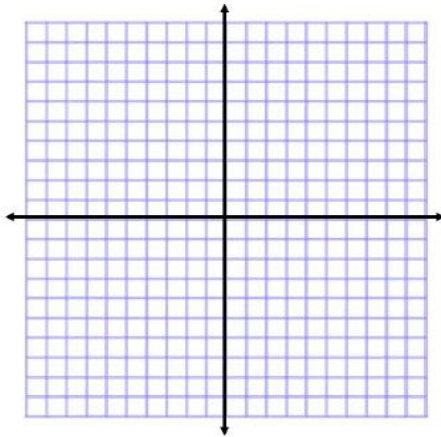
7. $2x - 5y > 20$



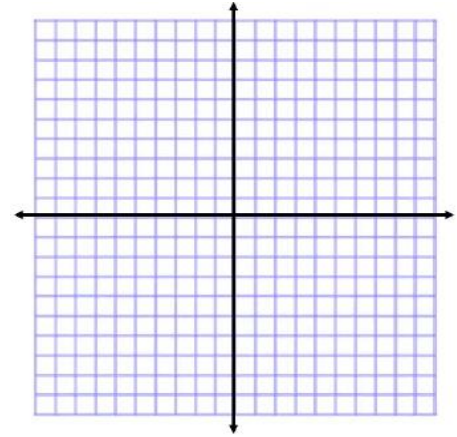
8. $x - 3y < 6$



9. $x + 5y \geq 10$



10. $-x + y \leq 4$



Calculate the slope of the line that goes through the given points.

1. $(-2, 5)$ $(3, 11)$

2. $(4, 7)$ $(4, -3)$

3. $(7, 4)$ $(-3, 4)$

4. $(3, -5)$ $(-7, 10)$

5. $(-11, 2)$ $(5, 10)$

6. $(3, 7)$ $(-2, 1)$

7. $(5, -4)$ $(3, 10)$

8. $(-7, 2)$ $(8, -3)$

Write an equation of a line with the given information.

1. with a slope of $\frac{4}{3}$ and a y-intercept of -11.

2. with a slope of -5 and contains the point $(-1, 2)$

3. with a slope of zero and contains $(6, 15)$

4. goes through $(1, 5)$ & $(2, 8)$ (**HINT: calculate "m" first**)

5. $m = -11$ and contains $(2, -5)$

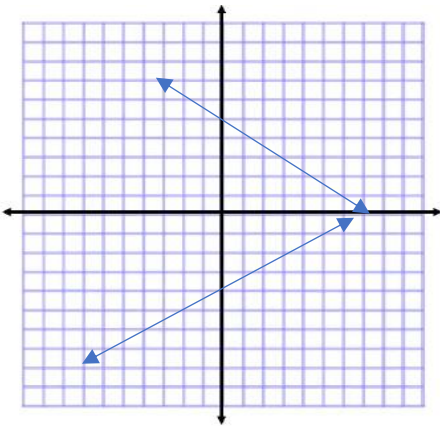
6. Slope of 1 and goes through $(-4, 10)$

7. $m = \frac{1}{2}$ and x-intercept of 5

8. Slope of -2 and contains (4, -5)

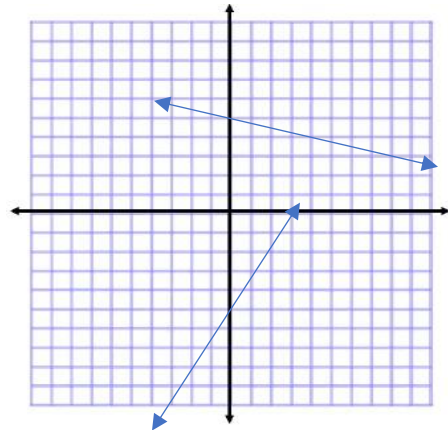
9.

10.



11.

12.



Solve each equation/inequality. Check the solution.

1. $-4x + 3 = -2x - 15$

2. $x - 3(x - 4) = 26$

3. $4 - 7x = x + 44$

4. $2(x - 5) + 3x = 115$

5. $x = 3x - 5(x + 12)$

6. $x + 5 + x + x - 11 = 312$

7. $\frac{4}{5}x - (-2) = 30$

8. $x - 11 - 5x = 3x + 3$

9. $-4(2x - 5) = 2(3x - 1)$

Solving proportions...use cross multiplication:

10. $\frac{x+5}{12} = \frac{-x}{2}$

11. $\frac{-2y}{5} = \frac{y-3}{10}$

12. $\frac{y}{8} = \frac{y-3}{10}$

13. $\frac{2x-4}{8} = \frac{x-3}{10}$

Solving absolute value equations:

14. $|x + 3| - 1 = 15$

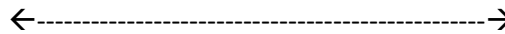
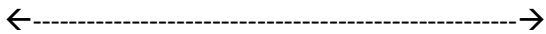
15. $|x| + 5 = 15$

16. $|x - 7| = 12$

17. $|x + 4| + 5 = 12$

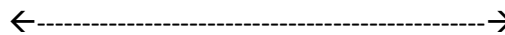
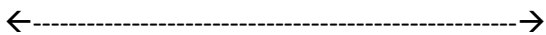
18. $-2x \geq 10$ or $x - 11 > -10$ (Graph the solution)

19. $\frac{5}{7}x < -10$ or $x - 6 > -10$ (Graph the solution)



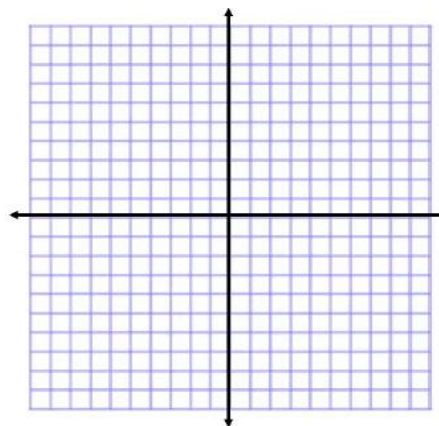
20. $-3 < 5x + 2 \leq 17$ (Graph the solution)

21. $15 < 2x - 1 \leq 13$ (Graph the solution)

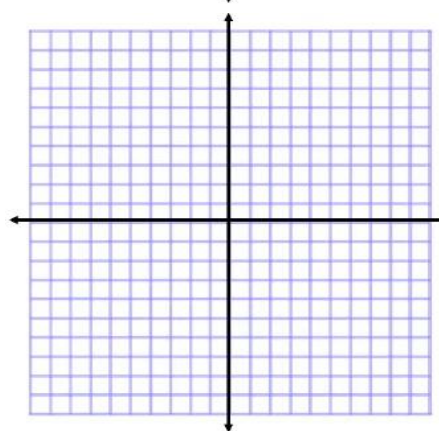


Solve each system by graphing. Write your solution on the blank.

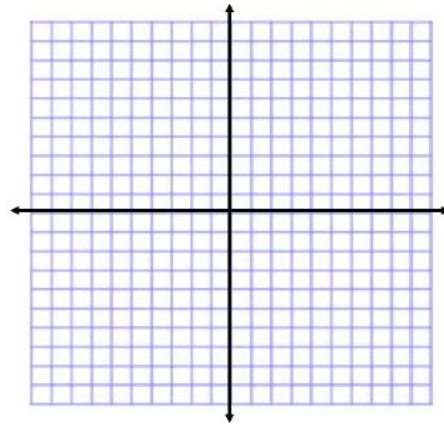
1. $\begin{cases} y = 2x - 4 \\ y = -x - 7 \end{cases}$ _____



2. $\begin{cases} y = -\frac{3}{4}x + 5 \\ y = .5x \end{cases}$ _____



$$3. \begin{cases} y = x + 2 \\ y = 3x + 8 \end{cases} \quad \text{_____}$$



Solve each system by substitution. (Plug in...use PARENTHESIS 😊) Write your solution on the blank.

$$1. \begin{cases} x = y + 5 \\ 2x + y = -50 \end{cases} \quad \text{_____}$$

$$2. \begin{cases} y = 5x \\ -2x + y = 111 \end{cases} \quad \text{_____}$$

$$3. \begin{cases} y = 2x - 7 \\ x + 3y = 42 \end{cases} \quad \text{_____}$$

Solve each system by elimination. (Create opposites, Add the equations, Solve, Plug in, Solve...CASPS)

$$1. \begin{cases} 2x + y = 7 \\ x + 3y = 1 \end{cases}$$

$$2. \begin{cases} 3x + y = 17 \\ 5x - y = 23 \end{cases}$$

$$3. \begin{cases} 2x - 2y = 8 \\ 3x + y = -34 \end{cases}$$

$$4. \begin{cases} 2x + y = -3 \\ -2x + 4y = 28 \end{cases}$$

4. The sum of two numbers is 291 and their difference is 197. Find the two numbers.

5. You set up a booth at a local craft fair selling jewelry. On Saturday, you sold 10 necklaces and 20 bracelets. On Sunday, you sold 8 necklaces and 30 bracelets. How much did you charge for each?

6. You have 40 nickels and quarters totaling \$4.60. How many of each coin do you have?

Simplify each expression. (Get rid of parenthesis, combine like terms)

1. $(x^2 - 3x - 11) - (4x^2 - x + 8)$

2. $(x - 4)(x + 15)$

3. $(7x - 5)^2$

4. $(x + 15)^2$

5. $(3x - 2)(4x + 13)$

6. $(5y - z)(3y + 2z)$

7. $(x - 7)(x - 5)$

8. $(x - 11)(5x + 3)$

9. $(x^2 - 5x + 11) + (3x^2 - 9x + 9)$

10. $(2x - 5)(8x - 1)$

11. $(x + 10)(x - 14)$

12. $(7x - 2)(3x + 5)$

13. $5(2x - 3) - 7(x + 1)$

14. $(x - 3y)^2$

15. $(4x^2 - 11x) - (-5x^2 + x)$

Factor each polynomial.

1. $x^2 - 11x + 28$

2. $x^2 - 3x - 154$

3. $x^2 + 42x + 152$

4. $x^2 - 11x - 60$

5. $x^2 - 16x + 64$

6. $x^2 - x - 72$

7. $x^2 + 8x - 33$

8. $x^2 - 13x + 42$

9. $x^2 + 18x + 45$

10. $x^2 - 7x - 144$

11. $x^2 + 22x + 120$

12. $x^2 - 9x + 14$

(Difference of 2 Squares)

13. $x^2 - 196$

14. $16x^2 - 1$

15. $25x^2 - 9y^2$

16. $c^2 - 9$

17. $x^2 - 81$

18. $4x^2 - 121$

19. $y^2 - 256$

20. $x^2 - 225$

(Slide Method...SFDRS)

21. $8x^2 + 50x + 33$

22. $2x^2 + 11x - 90$

23. $5x^2 + 33x - 14$

24. $2x^2 + 15x - 77$

25. $3x^2 + x - 4$

26. $16x^2 - 24x + 9$

27. $9x^2 + 9x - 4$

28. $7x^2 - 31x - 20$

29. $4x^2 + 20x + 25$

Solve each quadratic using the indicated method.

Square root method:

1. $\frac{4}{3}x^2 - 1 = 11$

2. $2x^2 + 11 = 31$

3. $9x^2 = 121$

4. $5x^2 - 3 = 42$

Solve by Factoring:

1. $x^2 + 5x = -126$

2. $x^2 - x - 110 = 0$

3. $x^2 + 5x = 104$

Quadratic formula:

1. $x^2 + 7x = -9$

2. $4x^2 - x - 11 = 0$

3. $x^2 - 10x + 25 = 0$

Simplify each radical expression.

1. $\sqrt{180}$

2. $\sqrt{50}$

3. $\sqrt{98}$

4. $\sqrt{90}$

5. $\sqrt{48}$

6. $\sqrt{128}$

7. $\sqrt{245}$

8. $\sqrt{425}$

9. $\sqrt{112}$

10. $\sqrt{220}$

11. $-7\sqrt{3} \cdot 5\sqrt{18}$

12. $5\sqrt{10} \cdot 11\sqrt{15}$

13. $4\sqrt{5} \cdot 7\sqrt{20}$

14. $(5\sqrt{3})^2$

15. $5\sqrt{6} \cdot 2\sqrt{15}$

16. $(4\sqrt{10})^2$

17. $-\sqrt{5} \cdot 4\sqrt{7}$

18. $(2\sqrt{5})^2$

(Rationalizing the denominator)

19. $\frac{5}{\sqrt{7}}$

20. $\frac{11}{\sqrt{2}}$

21. $\frac{7}{\sqrt{3}}$

22. $\frac{3}{\sqrt{11}}$

23. $\frac{15}{\sqrt{5}}$

24. $\frac{18}{\sqrt{2}}$

(Combining like radicals)

25. $4\sqrt{5} + 9\sqrt{5} + \sqrt{5}$

26. $\sqrt{15} + 7\sqrt{15}$

27. $5\sqrt{3} - 9\sqrt{3}$

28. $-12\sqrt{7} - \sqrt{7}$

EXPONENTS:

Simplify.

1. $y^2 \cdot y^{11} \cdot x^3 \cdot x$

2. $x^4 \cdot y^7 \cdot x^{-9}$

3. $x^{-2} \cdot y^{11} \cdot x^{10}$

4. $x^3 \cdot y \cdot x^7 \cdot y^5 \cdot y^{11}$

5. $(-2x^{-4}z^{11})^3$

6. $(15x^4y^{-5})^2$

7. $(x^5y^9)^2$

8. $(-7xy^{-3})^2$

$$5. \frac{-3x^8y^5z^{-2}}{x^5y^{12}}$$

$$6. (4a^{12}b^0)(12a^5c^{-8})$$