Solve the following equations for x.

1) $2x + 6 = -12$

2) $3(x + 4) = -24$

3) $5x - 8 = x - 4$

Solve and graph the following inequalities.

4) $x + 5 < 2x - 3$

5) $-2x + 4 \geq 12$

6) $2(x - 5) < 4$

Determine the **equation of the line** that passes through the indicated slope and point.

7) $m = \dfrac{2}{3}$ and $(6, -6)$

8) Determine the **equation of the line** that passes through the points $(0,6)$ and $(1,0)$.

9) Determine the **equation of the line** that passes through the point $(2, -5)$ and is parallel to the equation $y = 3x - 4$
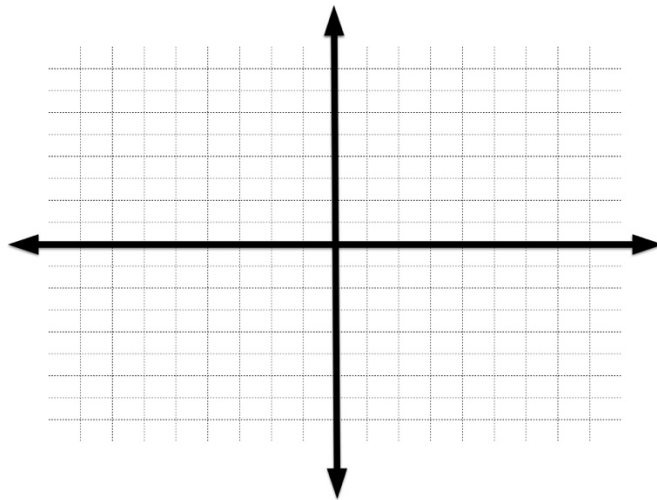
10) Determine the **equation of the line** that passes through the point $(9, -2)$ and is parallel to the equation $y = 3x - 4$

Graph the following linear equations in two variables, use this graph.

11) $3x + y = -6$
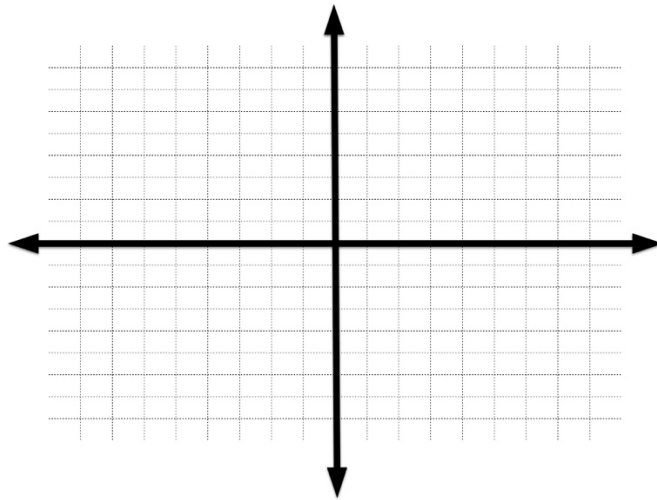
12) $3x + 4y = -12$

Solve the following system by the addition (elimination) method.

13) 
$$3x - y = 5$$
$$x + 2y = -3$$

Solve the following system by the substitution method.

14) 
$$2x + y = 4$$
$$x - y = 5$$

15) Two angles are complementary. If one angle is twice the other, then what are the angles?

16) The perimeter of a rectangle is 360 meters. The length is 40 meters more than the other angle, then what are the dimensions?

17)  Anne and Nancy use a metal alloy that is 17.8 % copper to make jewelry. How many ounces of a 13 % alloy must be mixed with a 29 % alloy to form 90 ounces of the desired  alloy?

Use properties of exponents to simplify the following.

18) $\dfrac{12xy^3}{2xy}$

19) $\dfrac{24x^2y^{-3}}{2xy}$

20) $(2x^2y)^{-3}$

21) $5x^2 \cdot 3x^4$

22) $\dfrac{x^6}{x^{-2}}$

23) $3x^5 \cdot 2x^{-4}$

Add and Subtract the following.

24) $(4x^2 - 3x + 5) + (x^2 - 2x - 8)$

25) $(4x^2 - 3x + 5) - (x^2 - 2x - 8)$

Multiple the following

26) $4x(x^2 + 4)$

27) $(3x - 2)(x - 5)$

28) $(4x + 1)(4x - 1)$

29) $(x + 5)(x^2 + 6x - 4)$

Divide the following

30) $\dfrac{6x^2y + 4xy^3 - 8xy}{2xy}$

Solve for x

31) $x^2 - 12x + 27 = 0$

32) $x^2 = 16$

33) $2x^2 + 11x + 15 = 0$

34) $x^2 + x - 12 = 0$

35) $2x^2 = x + 15$

36) $(x + 2)(x - 7) = -18$

37) What is your name?

| | | | |
|---|---|---|---|
| 1 | | 19 | |
| 2 | | 20 | |
| 3 | | 21 | |
| 4 | | 22 | |
| 5 | | 23 | |
| 6 | | 24 | |
| 7 | | 25 | |
| 8 | | 26 | |
| 9 | | 27 | |
| 10 | | 28 | |
| 11 | | 29 | |
| 12 | | 30 | |
| 13 | | 31 | |
| 14 | | 32 | |
| 15 | | 33 | |
| 16 | | 34 | |
| 17 | | 35 | |
| 18 | | 36 | |