

**\*\*Show all work\*\***

**Honors Advanced Algebra Name: \_\_\_\_\_**  
**Summer Packet**

Simplify:

1.  $2x^2 - 3x - 4x^2 + 8x$

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

Use the quadratic formula to solve:

3.  $x^2 - 3x + 1 = 0$

Solve:

4.  $\frac{x+3}{4} = \frac{2x-5}{7}$

Simplify:

5.  $3\sqrt{8} - 5\sqrt{18}$

Simplify:

6.  $3\sqrt{6} + 5\sqrt{6} - 2\sqrt{6}$

7.  $\sqrt{80}$

8.  $3\sqrt{7} + 3\sqrt{5} - 5\sqrt{7}$

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

10.  $(x-1)(2x+3)^2$

Solve by factoring:

11.  $x^2 + 7x - 18 = 0$

Solve by substitution:

12. 
$$\begin{cases} X + Y = 30 \\ 5X - Y = 60 \end{cases}$$

Solve by using elimination:

13. 
$$\begin{cases} 2x + y = 6 \\ x - y = 15 \end{cases}$$

14. Forty percent of what number is 120 ?

Solve:

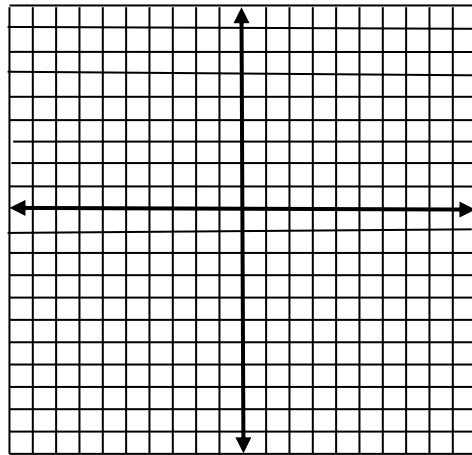
15.  $3\frac{1}{2}n - \frac{7}{12} = \frac{3}{4}$

Expand:

16.  $x^2a^3(2x^{-2}ay^3 - 3axy^3)$

Graph:

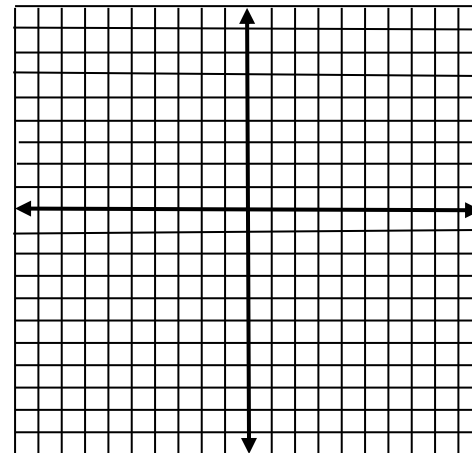
17.  $y = \frac{-2}{5}x + 1$



18. Convert  $15 \frac{ft}{sec}$  to  $\frac{yds}{hr}$

Graph:

19.  $4x + 6y = 24$



Simplify:

20.  $2\frac{3}{4} \div 3\frac{1}{2}$

Simplify:

21.  $-5^0(-7^0 - 3^0 - |-6|) - (-3)(-4)$

Simplify:

22.  $\frac{-5 - (-3) + 8 - 4(6) - 4}{6 - 3(-2)}$

Solve:

23.  $\frac{n-9}{n+4} = \frac{-2}{7}$

24.  $6x^2 = 30x$

Multiply:

25.  $(2x-3)(x^2 + 2x - 5)$

Solve:

26.  $\frac{3x-2}{4} + \frac{x-3}{3} = 1$

Solve:

27.  $\frac{x-2}{2} - \frac{x-3}{3} = 3$

Solve:

28.  $4(x+3) = 3(2x-5)$

Solve:

29.  $2x+5 = x-8$

Simplify:

30.  $\frac{4x}{5} - \frac{3x}{5}$

Simplify:

31.  $\frac{a}{7} - \frac{5a}{2}$

Simplify:

32.  $\frac{x^2 - 4}{x^2 + 2x}$

Solve:

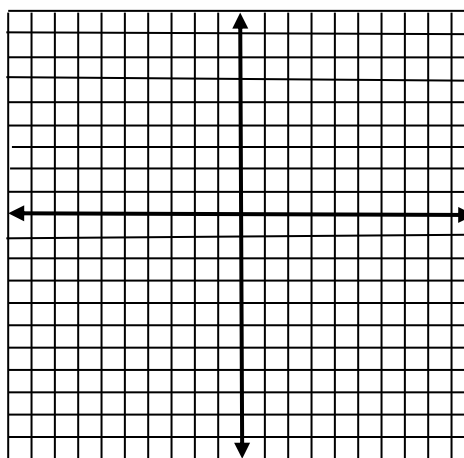
33.  $3x+3-6x-6=19$

Solve:

34.  $3(x+3)+6(x-6)=10$

Graph:

35.  $y = 4x + 1$



Simplify:

36.  $\frac{2}{\sqrt{3}}$

37. Three times the sum of a number and seven is equal to ten. Find the number.

Solve:

38.  $0.003x + 0.9 = 2.1$

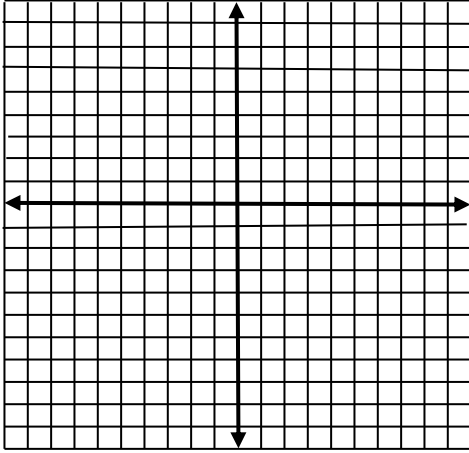
39. What percent of 40 is 15?

Simplify:

40.  $3\frac{1}{4} - 1\frac{5}{6}$

Graph:

41.  $x = -5$



Factor:

48.  $x^2 - 7x + 12$

Simplify:

49.  $(2xy^4)(3x^3y^5)$

Simplify:

50.  $2a^2 + 5x - 8 - 3(2a^2 - 3x + 2)$

Simplify:

42.  $2\frac{1}{3} \div 3\frac{1}{6}$

Solve:

43.  $-3[(-3)^0(-3-x) + 4(x-3)] = -3x^0$

44. The sum of two numbers is 136 and their difference is 50. What are the numbers?

Evaluate:

45.  $ac^2(a^2 - c)$  if  $a = \frac{-1}{5}$  and  $c = \frac{1}{2}$

Simplify:

46.  $(4xy^2)^3$

Evaluate:

47.  $ac - 2ac^2$   $a = 2$  and  $c = -3$