

Directions 1-10: Perform the multiplication.

1.  $3(5x + 1)$

2.  $-12(3w - 2)$

3.  $4y(2y + 7)$

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

5.  $(q - 2)(q + 3)$

6.  $(b - 2)(b - 5)$

7.  $(x + 1)(x + 3)$

8.  $(3g + 5)(g - 3)$

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

10.  $(6z - 7)(2z + 1)$

Directions 11-30: Factor the expression.

11.  $15x + 3$  (hint see #1)

12.  $6y + 28$

13.  $-10w + 30$

14.  $2g^2 - 4g$

15.  $-6k^2 - 3k$

16.  $24m^2 - 14m$

17.  $q^2 + q - 6$  (hint see #5)

18.  $y^2 + 15y + 36$

19.  $d^2 - 12d + 27$

20.  $x^2 - 5x - 14$

21.  $y^2 + 22y + 40$

22.  $h^2 + 2h - 63$

23.  $x^2 - 11x + 18$

24.  $3g^2 - 4g - 15$  (hint: see #8)

25.  $2x^2 + 7x - 30$

26.  $5x^2 - 32g + 12$

27.  $4w^2 + 17w + 4$

28.  $12y^2 + 32y + 21$

29.  $6g^2 - 23g + 20$

30.  $18y^2 + 21y - 4$

Directions 1-18: Simplify the expression.

1.  $\sqrt{12}$

2.  $\sqrt{54}$

3.  $\sqrt{180}$

4.  $\sqrt{1500}$

5.  $\sqrt{864}$

6.  $\sqrt{2450}$

7.  $5(6\sqrt{3})$

8.  $-2(\sqrt{12})$

9.  $4(\sqrt{48})$

10.  $-7(\sqrt{250})$

11.  $(\sqrt{3})(\sqrt{2})$

12.  $(-\sqrt{5})(\sqrt{10})$

13.  $(\sqrt{6})(-\sqrt{18})$

14.  $(\sqrt{24})(\sqrt{72})$

15.  $(-2\sqrt{5})(7\sqrt{3})$

16.  $(6\sqrt{6})(4\sqrt{2})$

17.  $(6\sqrt{14})(8\sqrt{21})$

18.  $(9\sqrt{18})(-10\sqrt{125})$

Directions 1-12: Solve the equation. Leave answers as simplified improper fractions if necessary.

1.  $180 - x = 3(90 - x)$

2.  $5(1 + 4m) = 3(2 + 10m)$

3.  $27 = 3g + 2(6 - g)$

4.  $15 = 5g - 3(2 - g)$

5.  $4(4x + 3) - 12 = 5 - 6(5x + 2)$

6.  $\frac{m}{5} = \frac{m-6}{4}$

7.  $-\frac{2}{3} = \frac{4x+1}{2x+14}$

8.  $\frac{r-8}{-2} = \frac{11-4r}{11}$

9.  $\frac{3}{2}x + 6 = 7$

10.  $\frac{2}{5}x + \frac{8}{5} = 1$

11.  $3\left(\frac{3}{8}y - 3\right) = 4$

12.  $\frac{5}{9}\left(\frac{6}{5}w - 2\right) = 9$

Directions 13-17: Solve for the indicated variable.

13. Solve for x:  $6x - 5y = 18$

14. Solve for r:  $C = 2\pi r$

15. Solve for y:  $4x + 5y = 10$

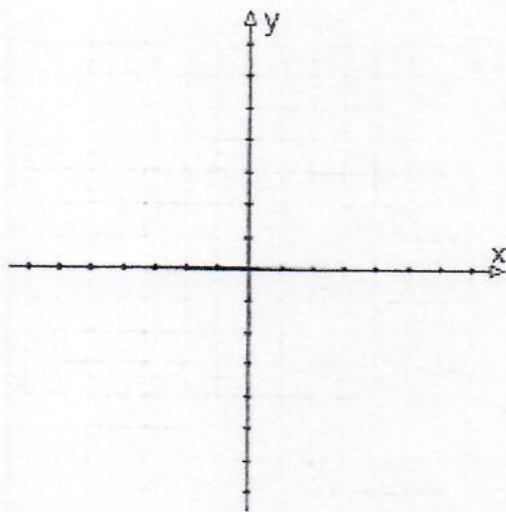
16. Solve for w:  $P = 2l + 2w$

17. Solve for C:  $F = \frac{9}{5}C + 32$

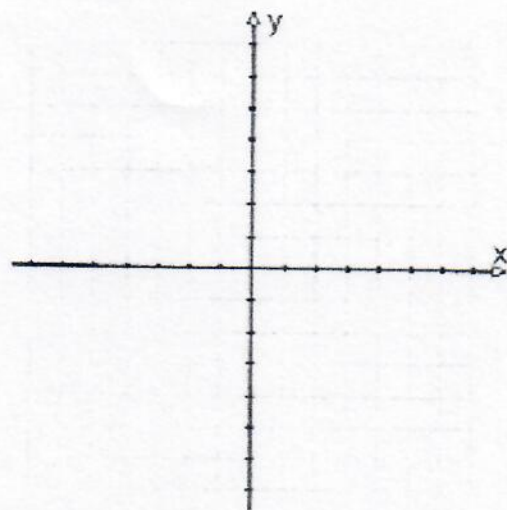


Directions 1-6: Solve by graphing

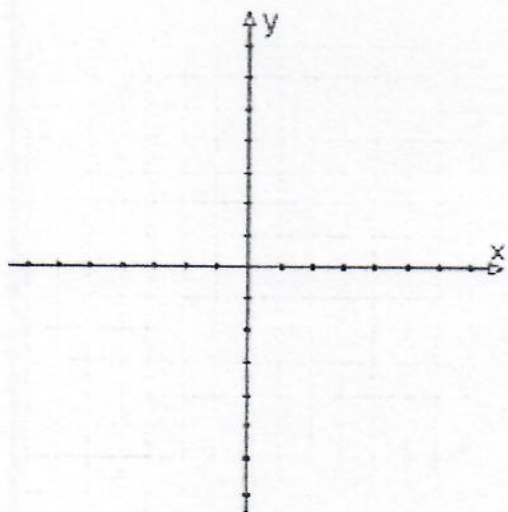
1.  $y = 3$   
 $y = 3x - 6$



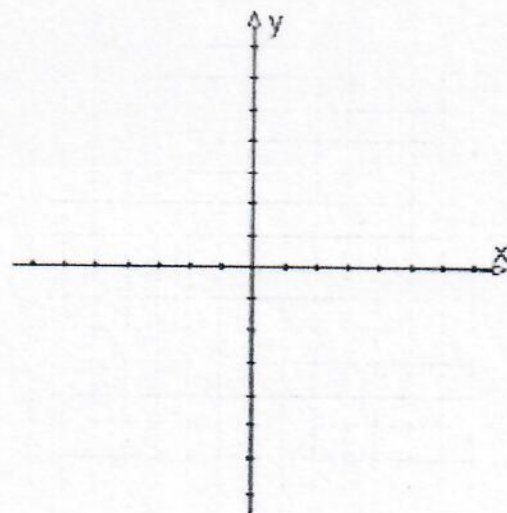
2.  $x = -2$   
 $y = \frac{1}{2}x + 7$



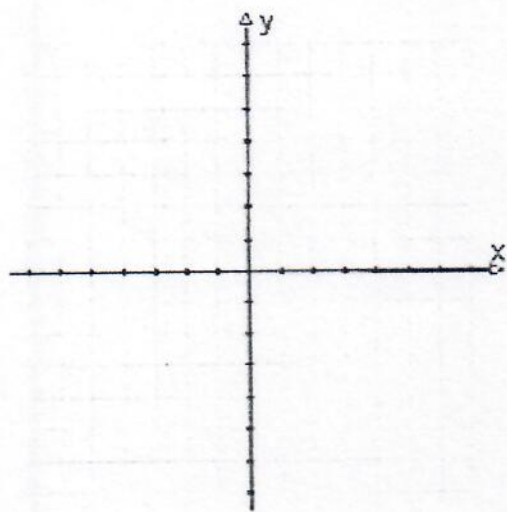
3.  $y = -\frac{2}{5}x + 3$   
 $y = -x$



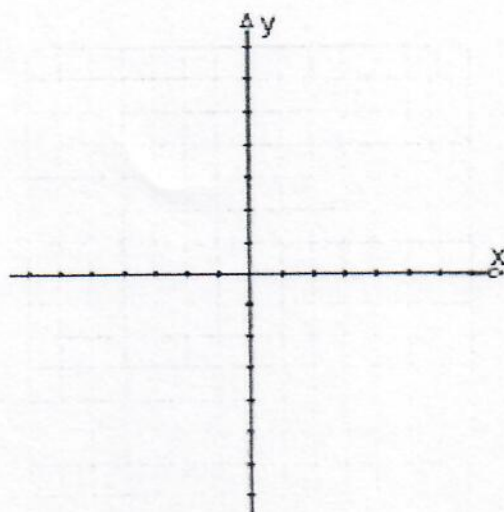
4.  $4x + 3y = 18$   
 $x - 2y = 10$



5.  $y = 2x + 1$   
 $y = x + 3$



6.  $3x + 2y = -8$   
 $3x - 2y = 4$



Directions 7-12: Solve by linear combinations (multiply and add/sub method).

7.  $9x + 2y = 17$   
 $3x - 2y = -5$

8.  $5x - 7y = 4$   
 $5x + 8y = -26$

9.  $6x + 5y = 19$   
 $2x + 3y = 5$

10.  $2x - 6y = -1$   
 $3x - 2y = -5$

11.  $5x + 2y = 8$   
 $2x - 3y = 7$

12.  $9x + 2y = 39$   
 $6x + 13y = -9$

Directions 13-18: Solve by substitution.

13.  $y = 3x + 2$   
 $x + 2y = 11$

14.  $x = 2y - 6$   
 $2x + 3y = 2$

15.  $x - y = 3$   
 $x + 2y = -6$

16.  $3x + y = -7$   
 $x - 2y = 0$

17.  $y = 2x + 5$   
 $3x + 4y = 9$

18.  $x = 8y + 12$   
 $y - \frac{1}{2}x = 6$