

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

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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: $4x + 5y = 10$

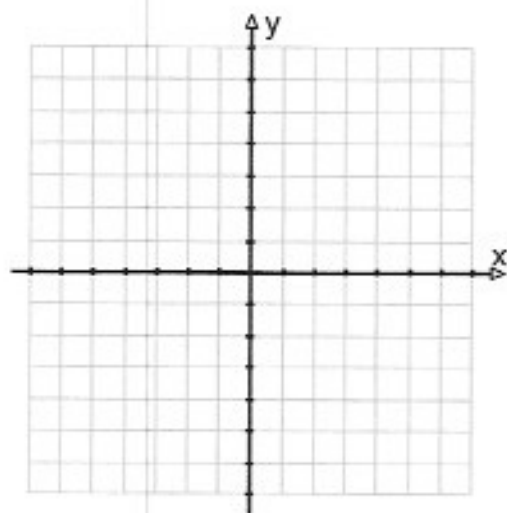
16. Solve for w: $P = 2l + 2w$

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

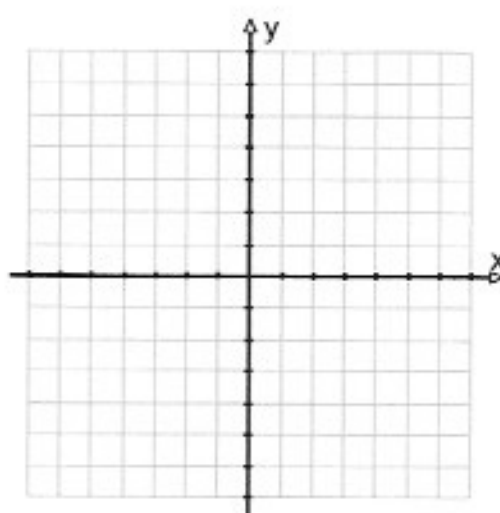
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Directions 1-6: Solve by graphing

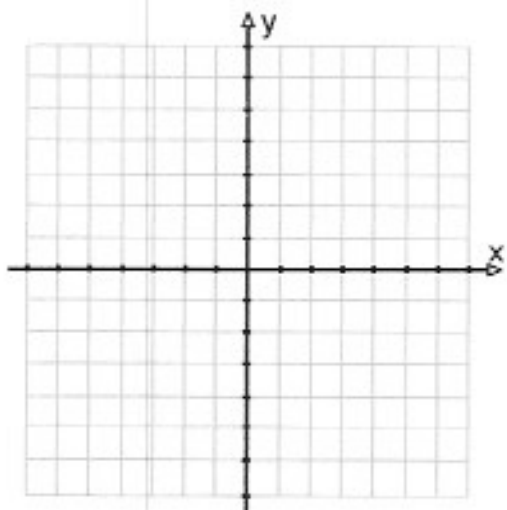
1. $y = 3$
 $y = 3x - 6$



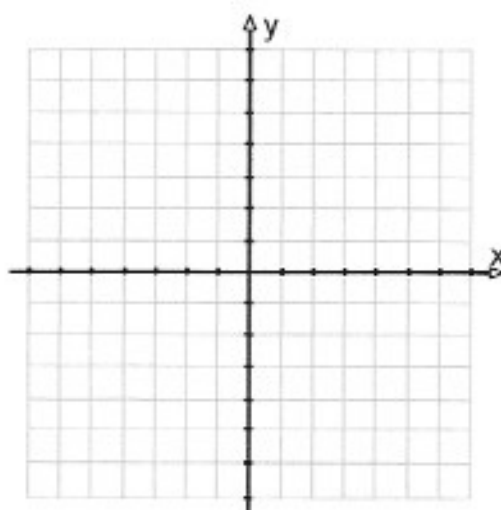
2. $x = -2$
 $y = \frac{1}{2}x + 7$



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

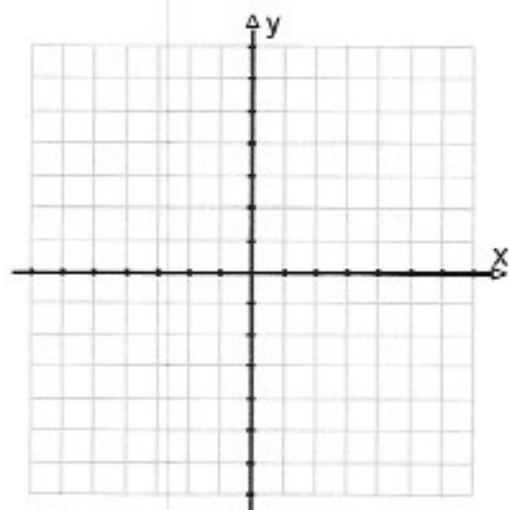


4. $4x + 3y = 18$
 $x - 2y = 10$

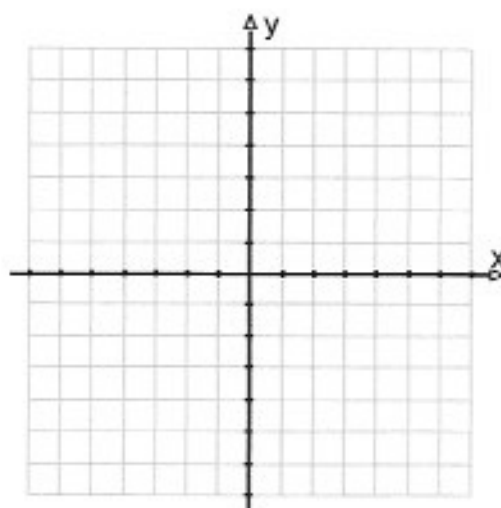


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5.
$$\begin{aligned}y &= 2x + 1 \\y &= x + 3\end{aligned}$$



6.
$$\begin{aligned}3x + 2y &= -8 \\3x - 2y &= 4\end{aligned}$$



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

7.
$$\begin{aligned}9x + 2y &= 17 \\3x - 2y &= -5\end{aligned}$$

8.
$$\begin{aligned}5x - 7y &= 4 \\5x + 8y &= -26\end{aligned}$$

9.
$$\begin{aligned}6x + 5y &= 19 \\2x + 3y &= 5\end{aligned}$$

10.
$$\begin{aligned}2x - 6y &= -1 \\3x - 2y &= -5\end{aligned}$$

11.
$$\begin{aligned}5x + 2y &= 8 \\2x - 3y &= 7\end{aligned}$$

12.
$$\begin{aligned}9x + 2y &= 39 \\6x + 13y &= -9\end{aligned}$$

Directions 13-18: Solve by substitution.

13.
$$\begin{aligned}y &= 3x + 2 \\x + 2y &= 11\end{aligned}$$

14.
$$\begin{aligned}x &= 2y - 6 \\2x + 3y &= 2\end{aligned}$$

15.
$$\begin{aligned}x - y &= 3 \\x + 2y &= -6\end{aligned}$$

16.
$$\begin{aligned}3x + y &= -7 \\x - 2y &= 0\end{aligned}$$

17.
$$\begin{aligned}y &= 2x + 5 \\3x + 4y &= 9\end{aligned}$$

18.
$$\begin{aligned}x &= 8y + 12 \\y &= \frac{1}{2}x + 6\end{aligned}$$

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