

Written Exercises

TPC: Literal Equations

Solve for x .

1. $bx = 5$

4. $-ax = c$

7. $\frac{r}{s} = \frac{3}{x}$

10. $ax - b = c$

13. $ax + bx = c$

16. $ax = 4c - 3x$

19. $cx = dx + 18$

22. $\frac{h}{5} + \frac{h}{3} = \frac{x}{15}$

2. $x - e = f$

5. $\frac{x}{y} = z$

8. $-5 = \frac{1}{cx}$

11. $n = ax + m$

14. $c = ax - bx$

17. $bx = 36 - dx$

20. $7ax = 16 - cx$

23. $\frac{x}{5b} = \frac{k}{j}$

3. $x + 2c = b$

6. $\frac{2}{x} = \frac{a}{c}$

9. $6x + b = c$

12. $px - q = -r$

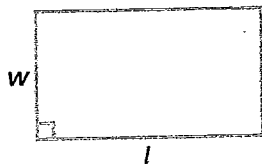
15. $ax = c + bx$

18. $mx = d + rx$

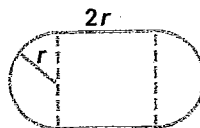
21. $\frac{x}{3} = \frac{a}{2} + \frac{t}{6}$

24. $\frac{x}{y} - g = v$

25. The formula for the perimeter of a rectangle is $p = 2l + 2w$. Solve for l . Then find l for $p = 49.4$ cm and $w = 6.3$ cm.



26. The formula for the perimeter of a model of a certain racetrack is $p = 4r + 2\pi r$. Solve for r . Then find r for $p \approx 30.84$.



Solve for x .

27. $-6x + c = -3x - 14c$

29. $kx - cd = 4e + f$

31. $px + q = rx - 6p$

33. $\frac{1}{a} + \frac{1}{b} = \frac{1}{x}$

28. $16a - 5bx = bx - 4$

30. $5ax + b = 80ax - c$

32. $-4a + 2bx = 12a + 10bx$

34. $v = \frac{x - t}{s}$

Solve each equation for the variable indicated.

36. $a^2 - ax + 12 = 4x - 7a$ for x

38. $\frac{rs}{a} + \frac{st}{b} = 1$ for s

40. $W = -G\left(c - \frac{Q}{m}\right)$ for Q

42. $a_1 = b\left(\frac{a_2}{b} + 4\right)$ for a_2

37. $rx + 2sx = r^2 - 7rs - 18s^2$ for x

39. $s = \frac{a - ar^2}{1 - r}$ for a

41. $ry^2 - b^2r - ty^2 + b^2t = y^2 - b^2$ for r

43. $V = \frac{A}{x_1} - \frac{B}{x_2}$ for x_2

$$1. x = \frac{s}{b}$$

$$2. x = f + e$$

$$3. x = b - ac$$

$$4. x = -\frac{c}{a}$$

$$5. x = yz$$

$$6. x = \frac{2c}{a}$$

$$7. x = \frac{3s}{r}$$

$$8. x = -\frac{1}{5c}$$

$$9. x = \frac{c}{b} - \frac{b}{b}$$

$$10. x = \frac{c}{a} + \frac{b}{a}$$

$$11. x = \frac{n}{a} - \frac{m}{a}$$

$$12. x = \frac{q}{p} - \frac{r}{p}$$

$$13. x = \frac{c}{a+b}$$

$$14. x = \frac{c}{a-b}$$

$$15. x = \frac{c}{a-b}$$

$$16. x = \frac{4c}{a+3}$$

$$17. x = \frac{3b}{b+d}$$

$$18. x = \frac{d}{m-r}$$

$$19. x = \frac{18}{c-d}$$

$$20. x = \frac{16}{7a+c}$$

$$21. x = \frac{3a+t}{2}$$

$$22. x = 8A$$

$$23. x = \frac{5bk}{f}$$

$$24. x = vy + gy$$

$$27. x = 5c$$

$$28. x = \frac{16a+4}{bb} = \frac{8a+2}{3b}$$

$$29. x = \frac{4e}{k} + \frac{f}{k} + \frac{cd}{k}$$

$$30. x = \frac{b+c}{75a}$$

$$31. x = \frac{-q-bp}{p-r} \text{ or } \frac{q+bp}{-p+r}$$

$$32. x = \frac{-2a}{b}$$

$$33. x = \frac{ab}{a+b}$$

$$34. x = sv + t$$

$$36. x = \frac{(a+3)(a+4)}{(a+4)}$$

$$37. x = \frac{r^2 - 7rs - 18s^2}{r+2s} = \frac{(r-9s)(r+2s)}{r+2s}$$

$$38. s = \frac{ab}{rb+at}$$

$$39. a = \frac{rs}{1-r^2}$$

$$40. \frac{mv}{G} + mc = Q$$

$$41. r = \frac{y^2 - b^2 + ty^2 - b^2t}{y^2 - b^2}$$

$$r = \frac{y^2 + ty^2 - b^2 - b^2t}{y^2 - b^2}$$

$$\frac{y^2(1+t) - b^2(1+t)}{y^2 - b^2}$$

$$\frac{(y^2 - b^2)(1+t)}{y^2 - b^2}$$

$$r = 1+t$$

42.

$$a_2 = a_1 - 4b$$

43

$$X_2 = \frac{Vx_1x_2 + Bx_1}{A}$$