▶ Review & Refresh

Solve the equation. Check your solution.
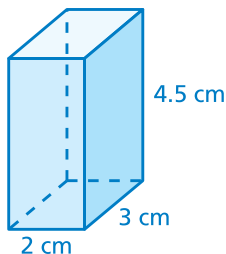
1. $-9z + 2 = 11$

2. $-3n - 4n - 17 = 25$

3. $-2(x + 3) + 5x = -39$
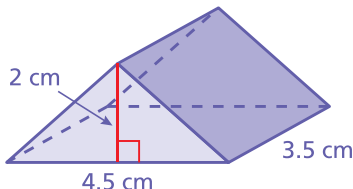
4. $-15 + 7.5(2d - 1) = 7.5$

Find the volume of the solid.

5.

4.5 cm

3 cm

2 cm
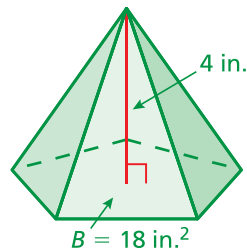
6.
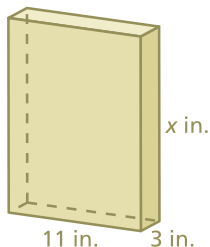
2 cm

4.5 cm

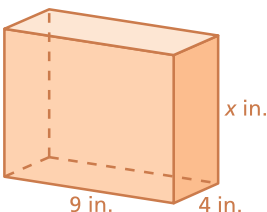3.5 cm

7.

4 in.

$B = 18$ in.^{2}

▶▶ Concepts, Skills, & Problem Solving

FINDING MISSING MEASURES IN FIGURES If possible, find the value of x so that the value of the surface area (in square inches) is equal to the value of the volume (in cubic inches). Use an equation to justify your answer. (See Exploration 1, p. 17.)
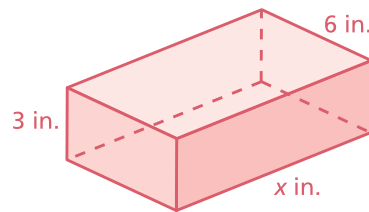
8.

x in.

11 in.   3 in.

9.

x in.

9 in.   4 in.

10.

6 in.

3 in.

x in.

SOLVING AN EQUATION Solve the equation. Check your solution.

11. $m - 4 = 2m$

12. $3k - 1 = 7k + 2$

13. $6x = 5x + 22$

14. $-24 - 8p = 4p$

15. $12(2w - 3) = 6w$

16. $2(n - 3) = 4n + 1$

17. $2(4z - 1) = 3(z + 2)$

18. $0.1x = 0.2(x + 2)$

19. $\frac{1}{6}d + \frac{2}{3} = \frac{1}{4}(d - 2)$

20. **MP** **YOU BE THE TEACHER** Your friend solves the equation shown. Is your friend correct? Explain your reasoning.

$$3x - 4 = 2x + 1$$
$$3x - 4 - 2x = 2x + 1 - 2x$$
$$x - 4 = 1$$
$$x - 4 + 4 = 1 - 4$$
$$x = -3$$

21. **MP MODELING REAL LIFE** Write and solve an equation to find the number of miles you must drive to have the same cost for each of the car rentals.

$20 plus $0.50 per mile $30 plus $0.25 per mile

SOLVING AN EQUATION Solve the equation. Check your solution, if possible.

22. $x + 6 = x$

23. $3x - 1 = 1 - 3x$

24. $3x + 15 = 3(x + 5)$

25. $4x - 9 = 3.5x - 9$

26. $\frac{1}{3}(9x + 3) = 3x + 1$

27. $5x - 7 = 4x - 1$

28. $\frac{1}{2}x + \frac{1}{2}x = x + 1$

29. $2x + 4 = -(-7x + 6)$

30. $5.5 - x = -4.5 - x$

31. $-3(2x - 3) = -6x + 9$

32. $10x - \frac{8}{3} - 4x = 6x$

33. $6(7x + 7) = 7(6x + 6)$

34. **MP YOU BE THE TEACHER** Your friend solves the equation shown. Is your friend correct? Explain your reasoning.

$-4(2n - 3) = 12 - 8n$
$-8n + 12 = 12 - 8n$
$-8n = -8n$
$0 = 0$
The solution is $n = 0$.

35. **OPEN-ENDED** Write an equation with variables on both sides that has no solution. Explain why it has no solution.

36. **MP MODELING REAL LIFE** A cable television provider charges $75 for installation and $39.96 per month for a basic entertainment package. A satellite television provider offers free installation and charges $13.32 per month for service for each television. Your neighbor subscribes to the cable provider the same month you subscribe to the satellite provider. After how many months is your neighbor's total cost the same as your total cost when you own three televisions?

37. **MP MODELING REAL LIFE** A pizza parlor makes 52 pizza crusts the first week of summer and 180 pizza crusts each subsequent week. A diner makes 26 pizza crusts the first week of summer and 90 pizza crusts each subsequent week. In how many weeks will the total number of pizza crusts made by the pizza parlor be twice the total number of pizza crusts made by the diner?

38. **MP PRECISION** Is the triangle an equilateral triangle? Justify your answer.

$2x + 5.2$ $3x + 1.2$

$2x + 6.2$