

Find the volume of the prism.



1. Write what you know about this word.

Review: solution



Find the width of the rectangle.

1. Area = 32 m^2







2 Extra Practice

The value of the perimeter of the figure is equal to the value of the area. Find the value of x.



Solve the equation. Check your solution.

- **3.** y 12 = 4y **4.** 6n - 12 = n + 3 **5.** $\frac{1}{5}q = 9 - \frac{2}{5}q$ **6.** 4.3d + 7.5 = 5.8d
- **7.** 6(h+4) = -2h **8.** 3(b-4) = 5b-2
- **9.** Your long distance telephone provider offers two plans. Plan A has a monthly fee of \$15 and \$0.25 per minute. Plan B has a monthly fee of \$20 and \$0.05 per minute. Write and solve an equation to find the number of minutes that you must talk to have the same cost for each of the plans.
- **10.** One-third of a number x is equal to 22 less than the number. Write and solve an equation to find the number.
- **11.** Find the perimeter of the regular polygon.



12. You purchase a desk for 60% of the original price p. This price is \$32 less than the original price. Write and solve an equation to find the original price of the desk.

Solve the equation.

13. $8x + 3 = 8x$	14. $-25(10-x) = 25x + 250$
15. $x + 1 = x + 1$	16. $6(2x+4) = 4(3x+6)$
17. $x + 2 = 5x$	18. $5x + 2 - x = -4x$

2 Reteach

To solve an equation with variables on both sides, you need to collect the variable terms on one side and the constant terms on the other. Use properties of equality to apply inverse operations and "undo" the operations in the equation.

EXAMPLE Solving an Equation with Variables on Both Sides

Solve 5y - 14 = 2y - 2.

5y - 14 = 2y - 2	Write the equation.
-2y $-2y$	Subtraction Property of Equality
3y - 14 = -2	Simplify.
+ 14 + 14	Addition Property of Equality
3y = 12	Simplify.
$\frac{3y}{3} = \frac{12}{3}$	Division Property of Equality
y = 4	Simplify.

So, the solution is y = 4.

Some equations have no solution. There is no value of the variable that makes the equation true. If you apply properties correctly and obtain an equivalent equation that is never true, then the equation has no solution.

EXAMPLE Solving an Equation with No Solution

Solve 4x - 3 = 4x + 2.

4x - 3 = 4x + 2	Write the equation.
-4x $-4x$	Subtraction Property of Equality
-3 = 2 X	Simplify.

-3 = 2 is never true. So, the equation has no solution.

2 Reteach (continued)

Some equations have infinitely many solutions. The equation is true for all values of the variable. If you apply properties correctly and obtain an equivalent equation with the same number on both sides, then the equation has infinitely many solutions.

EXAMPLE Solving an Equation with Infinitely Many Solutions

Solve -3(x + 5) = -(3x + 15).

-3(x+5) = -(3x+15)	Write the equation.
-3x - 15 = -3x - 15	Distributive Property
+3x $+3x$	Addition Property of Equality
-15 = -15	Simplify.

-15 = -15 is always true. So, the equation has infinitely many solutions.

Solve the equation. Check your solution.

1.	9a + 2 = 4a - 18	2.	4x + 4 = 2x + 36
3.	-15 + 6z = -8z + 13	4.	2(j-4) = 3j
5.	5(n-3) = 2n-6	6.	6(w+3) = -2(w+31)
7.	2p + 10 = 2p + 3	8.	3(2x-1) = 6x - 3
9.	5h + 4 = 10h + 8	10.	4m + 5 = 2(2m + 1)
11.	$\frac{1}{2}(8b+14) = 4b+7$	12.	10k + 5 - 3 = 6k + 4k + 2

Topic

Enrichment and Extension

Where can you buy a ruler that is three feet long?

Solve the equations. Order the solutions from least to greatest. Once ordered, the variables will spell the answer to the riddle.

- **1.** 5d 4 = 4 d **2.** -10e + 15 = 95 30e
- **3.** 15t + 17 = 13t + 14 **4.** -12 a = 4a 7
- **5.** 4a 16 = a 15 **6.** 4y + 12 = 6y + 12
- **7.** 0.25r 0.25 + 0.25r = 0.5 0.25r **8.** -4a + 7 = a + 32
- **9.** 13s 31 = 2s 9 **10.** a + 1.25 = 2a 1
- **11.** $3\ell + 4 + \ell = 13 + \ell$





What Happens When A Frog Double-Parks On A Lily Pad?

Write the letter of each answer in the box containing the exercise number.

Solve the equation.

- **1.** x + 36 = 4x**2.** 6a + 12 = 2(3a - 8)**4.** 7 - 4.9t = 15 + 7.6t**3.** $\frac{3}{2}p - 14 = p + 13$ **6.** $\frac{1}{3}(b+6) = \frac{1}{4}b+8$ 5. $\frac{1}{3}(12f-3) = 4f-1$ 7. $\frac{3}{5}(2m-10) = \frac{2}{3}m + 10$ 8. 8.2(s+4) = 6.7s + 5.2**9.** On Monday, you run on a treadmill for $\frac{1}{2}$ hour at x miles per hour. On Tuesday, you walk the same distance on the treadmill, at 2 miles per hour slower, and it takes you $\frac{3}{4}$ hour. How many miles did you run on the treadmill on Monday? **10.** Jess spent 7x minutes on the computer. Her sister spent (5x + 10) minutes on the computer, which was the same amount of time Jess spent. How many minutes was Jess on the computer?
- 11. A rectangle is 6 units wide and (x 8) units long. It has the same area as a triangle with a height of 7 units and a base of (x 3) units. What is the area of the rectangle (in square units)?

An	swers
Y.	72
Α.	-18.4
Т.	42
0.	no solution
Α.	35
S.	54
Α.	12
D.	-0.64
W.	3
I.	infinitely many solutions
т.	30

5	7		3	11	2	10	4	8	9	1	6
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