Name _____ Date _____

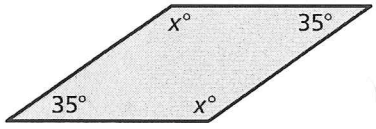
1.2 Practice A

Solve the equation. Check your solution.

1. $8y - 7 = 9$ $y=2$
2. $14 - 3m = -1$ $m=5$
3. $30 + 2k + 5k = 100$ $K=10$
4. $z + (z - 6) - 2 = -10$ $z=-1$
5. $3.2x - 1.7x + 5.5 = 10$ $x=3$
6. $\frac{3}{4}x - \frac{1}{4}x + 14 = 3$ $x=-22$

7. The cost C (in dollars) of making n feet of cabinet is represented by $C = 18n + 45$. How many feet of cabinet are made when the cost is \$441? $441=18n+45$ $n=22$ ft

8. The sum of the measures of the interior angles of the parallelogram is 360°. Write and solve an equation to find the value of the variable. $2x+70=360$, $2x=290$, $x=145$



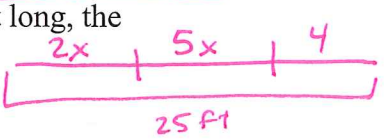
9. At the movies, you order 3 boxes of popcorn and a bottle of water. The cost of the bottle of water is \$1.75. Your total cost is \$9.25. Write and solve an equation to find the cost of one box of popcorn. $3x+1.75=9.25$, $x=\$2.50$

10. You and your friend each purchase an equal number n of magazines. Your magazines cost \$1.50 each and your friend's magazines cost \$2 each. The total cost for you and your friend is \$10.50. Write and solve an equation to find the number of magazines you purchased. $2n+1.5n=10.50$, $n=3$ magazines

11. A rope 25 feet long is cut into 3 pieces. The first piece is $2x$ feet long, the second piece is $5x$ feet long, and the third piece is 4 feet long.

    a. Write and solve an equation to find x. $2x+5x+4=25$

    b. Find the lengths of the first and second pieces. $7x+4=25$, $x=3$; 1st piece $= (2 \cdot 3) = 6$ ft; 2nd piece $= 5(3) = 15$ ft



12. The average of your 3 quiz grades is 17 points. Two of your quiz grades are 14 points and 19 points. Write and solve an equation to find the third quiz grade. $17 = \frac{14+19+x}{3}$, $51 = 33 + x$, $x = 18$ points

13. You had \$26 in your pocket. You purchased x pens at \$3.50 each. You now have \$8.50 in your pocket. Write and solve an equation to find the number of pens purchased. $3.5x + 8.50 = 26$, $x = 5$ pens

Name _____ Date _____

1.3 Puzzle Time

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. $x + 36 = 4x$ $x = 12$
2. $6a + 12 = 2(3a - 8)$ $6a+12 = 6a-16$, $12 = -16$ No Solution
3. $\frac{3}{2}p - 14 = p + 13$ $\frac{1}{2}p = 27$ $p = 54$
4. $7 - 4.9t = 15 + 7.6t$ $-8 = 12.5t$ $t = -.64$
5. $\frac{1}{3}(12f - 3) = 4f - 1$ $4f - 1 = 4f - 1$ infinite solutions
6. $\frac{1}{3}(b + 6) = \frac{1}{4}b + 8$ $\frac{1}{3}b + 2 = \frac{1}{4}b + 8$, $\frac{1}{12}b = 6$, $b = 72$
7. $\frac{3}{5}(2m - 10) = \frac{2}{3}m + 10$ $\frac{6}{5}x - 6 = \frac{2}{3}m + 10$, $\frac{8}{15}x = 16$, $x = 30$
8. $8.2(s + 4) = 6.7s + 5.2$ $8.2s + 32.8 = 6.7s + 5.2$, $1.5s = -27.6$, $s = -18.4$
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?

   $\frac{1}{2}x = \frac{3}{4}(x-2)$, $\frac{1}{2}x = \frac{3}{4}x - \frac{6}{4}$, $-.25x = -1.5$, $x = 6$, $\frac{1}{2}(6) = 3$
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?

    $7x = 5x + 10$, $2x = 10$, $x = 5$, $7(5) = 35$
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?

    $A = 6(x-8)$, $A = \frac{1}{2}(7)(x-3)$, $\Rightarrow$ $6(x-8) = \frac{1}{2}(7)(x-3)$, $6x - 48 = 3.5x - 10.5$, $2.5x = 37.5$, $x = 15$, $A = 6(15-8)$, $A = 42$

Answers

- **Y.** 72
- **A.** −18.4
- **T.** 42
- **O.** no solution
- **A.** 35
- **S.** 54
- **A.** 12
- **D.** −0.64
- **W.** 3
- **I.** infinitely many solutions
- **T.** 30

5	7		3		11	2	10	4		8	9	1	6
I	T	,	S		T	O	A	D		A	W	A	Y

Name _____ Date _____

1.4 Practice B

Solve the equation for *y*.

1. $3x - \frac{1}{4}y = -2$ $y = -4(-2-3x)$ $y = 8 + 12x$

2. $5x + 8y = 6\pi$ $y = \frac{6\pi - 5x}{8}$

3. $4y - 3.2x = 6$ $y = \frac{6 + 3.2x}{4}$

4. $4.5x - 1.5y = 5.4$ $y = \frac{5.4 - 4.5x}{-1.5}$

5. The formula for the volume of a rectangular prism is $V = \ell wh$.

   a. Solve the formula for w. $w = \frac{V}{\ell h}$

   b. Use the new formula to find the value of w when $V = 210$ cubic feet, $\ell = 10$ feet, and $h = 3$ feet. $w = \frac{210}{10 \cdot 3} = 7$ ft

Solve the equation for the bold variable.

6. $T = hP + 2\boldsymbol{B}$ $B = \frac{T - hP}{2}$

7. $C = 1000 + 80\boldsymbol{x}$ $x = \frac{C - 1000}{80}$

8. $S = \pi r^2 + 2\pi\boldsymbol{rh}$ $h = \frac{S - \pi r^2}{2\pi r}$

9. $A = \frac{1}{2}\boldsymbol{Pa}$ $P = \frac{2A}{a}$

10. The formula $F = \frac{9}{5}C + 32$ converts temperatures from Celsius C to Fahrenheit F.

    a. Solve the formula for C. $C = \frac{5}{9}(F - 32)$

    b. The boiling point of water is 212°F. What is the temperature in Celsius? $100^\circ C$

    c. If a house thermostat is set at 80°F, what is the setting in Celsius? Round your answer to the nearest tenth. $27^\circ C$

11. The formula for the area of a sector of a circle is $A = \frac{m}{360}\pi r^2$, given the measure m of the angle and the radius r of the circle.

    a. Solve the formula for m. $m = \frac{360A}{\pi r^2}$

    b. Find the measure of the angle when the area of the sector is 5 square centimeters and the radius is 2 centimeters. Round your answer to the nearest tenth. $m = \frac{360 \cdot 5}{\pi \cdot 2^2} = 143^\circ$

    c. If the area of the sector in part (b) is greater than 5 square centimeters, is the measure of the angle *greater than* or *less than* the answer to part (b)? Explain. Larger, the greater the area, the larger the angle.

Kuta Software - Infinite Algebra 1 Name_____

Multi-Step Equations

Date_____ Period____

Solve each equation.

1) $-20 = -4x - 6x$

$-20 = -10x$

$x = 2$

2) $6 = 1 - 2n + 5$

$6 = 6 - 2n$

$0 = -2n$

$n = 0$

3) $8x - 2 = -9 + 7x$

$x = -7$

4) $a + 5 = -5a + 5$

$6a = 0$

$a = 0$

5) $4m - 4 = 4m$

$0 = -4$

no solution

6) $p - 1 = 5p + 3p - 8$

$7 = 7p$

$1 = p$

7) $5p - 14 = 8p + 4$

$-18 = 3p$

$p = -6$

8) $p - 4 = -9 + p$

$-4 = -9$

No Solution

9) $-8 = -(x + 4)$

$x = 4$

10) $12 = -4(-6x - 3)$

$12 = 24x + 12$

$24x = 0$

$x = 0$

11) $14 = -(p - 8)$

$-14 = p - 8$

$p = -6$

12) $-(7 - 4x) = 9$

$-7 + 4x = 9$

$x = 4$

13) $-18 - 6k = 6(1 + 3k)$

$-18 - 6k = 6 + 18k$

$+6k \quad +6k$

$-18 = 6 + 24k$

$-6 \quad -6$

$-24 = 24k$

$k = -1$

14) $5n + 34 = -2(1 - 7n)$

$5n + 34 = -2 + 14n$

$-5n \quad -5n$

$34 = -2 + 9n$

$+2 \quad +2$

$9n = 36$ $n = 4$

15) $2(4x - 3) - 8 = 4 + 2x$

$8x - 6 - 8 = 4 + 2x$

$8x - 14 = 4 + 2x$

$-2x \quad -2x$

$6x - 14 = 4$

$+14 \quad +14$

$6x = 18$ $x = 3$

16) $3n - 5 = -8(6 + 5n)$

$3n - 5 = -48 - 40n$

$+40n \quad +40n$

$43n - 5 = -48$

$+5 \quad +5$

$43n = -43$ $n = -1$

17) $-(1 + 7x) - 6(-7 - x) = 36$

$-1 - 7x + 42 + 6x = 36$

$41 - 1x = 36$

$-41 \quad -41$

$-1x = -5$

$x = 5$

18) $-3(4x + 3) + 4(6x + 1) = 43$

$-12x - 9 + 24x + 4 = 43$

$12x - 5 = 43$

$+5 \quad +5$

$12x = 48$ $x = 4$

19) $24a - 22 = -4(1 - 6a)$

$24a - 22 = -4 + 24a$

$-24a \quad -24a$

$-22 = -4$

No Solution

20) $-5(1 - 5x) + 5(-8x - 2) = -4x - 8x$

$-5 + 25x - 40x - 10 = -4x - 8x$

$-15x - 15 = -12x$

$+15x \quad +15x$

$-15 = 3x$

$x = -5$

Name_____ Date_____

Chapter 1

Technology Connection

For use after Section 1.3

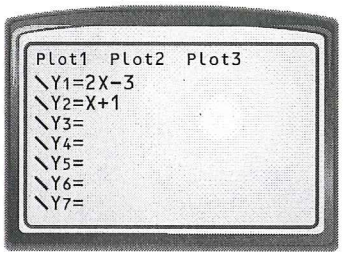
Using a Graphing Calculator to Solve Equations

You can use a graphing calculator to solve equations.

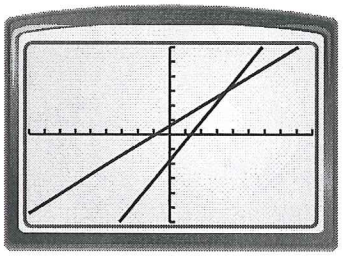
EXAMPLE Solve the equation $2x - 3 = x + 1$.

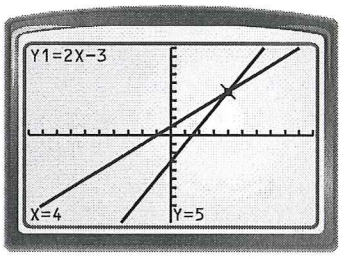
SOLUTION

Step 1 Use the Y= key. Enter the left side of the equation as Y_1 and the right side of the equation as Y_2.



Step 2 Press the GRAPH key. Use the STANDARD WINDOW.





Step 3 Use the TRACE key and the left and right arrow keys to find the x-value where the two lines cross. The two lines cross when $x = 4$.

Step 4 Check your answer in the equation.

$$2x - 3 = x + 1$$
$$2(4) - 3 \stackrel{?}{=} 4 + 1$$
$$8 - 3 \stackrel{?}{=} 5$$
$$5 = 5 \checkmark$$

Use a graphing calculator to solve the following equations.

1. $3x + 2 = x + 6$ $x = 2$

2. $2x + 5 = 3 + x$ $x = -2$

3. $5x + 4 = 3x + 7$ $x = 1.5$

Advanced 2 - Unit 1 Review - Pgs 33-35

1. $y = -19$
2. $n = -8$
3. $t = 2\pi$
4. $x = 35$, Angles: $40^\circ, 105^\circ, 35^\circ$
5. $x = 120$, Angles: $60^\circ, 120^\circ, 120^\circ, 60^\circ$
6. $x = 135$, Angles: $90^\circ, 135^\circ, 90^\circ, 135^\circ, 90^\circ$
7. $m = 6$
8. $p = 0.4$
9. $n = -19$
10. no solution
11. no solution
12. infinite solutions
13. $y = -\frac{1}{6}x + \frac{4}{3}$
14. $y = 2x - 3$
15. $y = -\frac{1}{2}x + 2$
16. a. $K = \frac{5}{9}(F - 32) + 273.15$

    b. about 388.71 K
17. a. $A = \frac{1}{2}h(b_1 + b_2)$

    b. $h = \frac{2A}{b_1 + b_2}$

    c. $h = 6$ cm