

## DAY 1: SOLVING ONE STEP EQUATIONS

**OBJECTIVE:** To solve one step equations in one variable.

- Determine inverse operation used to solve equations.
- Solve an equation using four operations.
- Solve equations using reciprocals.
- Illustrating models to solve equations.
- Constructing equivalent equations.
- Justify equivalent equations.

**ESSENTIAL UNDERSTANDING:** Equivalent equations are equations that have the same solutions. The solution of a one-step equation can be found using the properties of equality and inverse operations to write simpler equations.

### LESSON VOCABULARY:

**Equivalent Equations:** equations that have the same solution.

**Addition Property of Equality:** adding the same number to each side of an equation produces an equivalent equation.

**Subtraction Property of Equality:** Subtracting the same number from each side of an equation produces an equivalent equation.

**Isolate:** Using properties of equality and inverse operations to get a variable of 1 alone on one side of the equation.

**Inverse Operations:** Undoes another operation

**Multiplication Property of Equality:** Multiplying each side of an equation by the same nonzero number produces an equivalent equation.

**Division Property of Equality:** Dividing each side of an equation by the same non zero number produces an equivalent equation.

### LESSON:

#### SOLVING EQUATIONS USING ADDITION AND SUBTRACTION:

1)  $x + 13 = 27$

2)  $y + 2 = -6$

3)  $m - 8 = -14$

4)  $\frac{1}{2} = y - \frac{3}{2}$

5)  $-12 + x = 17$

6)  $-2.5 = p + 7.1$

SOLVING EQUATIONS USING MULTIPLICATION AND DIVISION:

1)  $4x = 6.4$

2)  $-7y = 28$

3)  $11 = 2.2t$

4)  $\frac{q}{-9} = -9$

5)  $\frac{4}{5}m = 28$

6)  $\frac{1}{5}x = \frac{2}{7}$

USING ONE STEP EQUATIONS AS MODELS:

- 1) Toucans and blue and yellow macaws are both tropical birds. The length of an average toucan is about two thirds of the length of an average blue and yellow macaw. Toucans are about 24 in. long. What is the length of an average blue-and-yellow macaw?

- 2) An online DVD rental company offers gift certificates that you can use to purchase rental plans. You have a gift certificate for \$30. The plan you select costs \$5 per month. How many months can you purchase with this gift certificate?

SUGGESTED LESSON:

CLASSWORK: Lesson Check

HOMEWORK: Worksheet evens

## Solving Equations

## Skills Practice

Name \_\_\_\_\_ Date \_\_\_\_\_

Solve. Then, check the solution.

1.  $y - 2 = 9$

2.  $7 = t + 4$

3.  $-18 = -5 + u$

4.  $x - 10 = -26$

5.  $y + 8 = 3$

6.  $w - 28 = 0$

7.  $-5 + m = 23$

8.  $-54 = k + 6$

9.  $b - 19 = 19$

10.  $3t = -21$

11.  $7a = 63$

12.  $-y = 44$

13.  $-3n = 0$

14.  $-92 = 4q$

15.  $85 = 85s$

16.  $\frac{x}{10} = 4$

17.  $8 = \frac{y}{20}$

18.  $\frac{m}{-11} = -4$

19.  $0 = \frac{x}{-23}$

20.  $\frac{c}{-3} = -13$

21.  $\frac{k}{5} = 20$

22.  $0 = d + 63$

23.  $-6p = -36$

24.  $-12 = \frac{n}{7}$

**2-1****Practice**

Form K

**Solving One-Step Equations**

Solve each equation using addition or subtraction. Check your answer.

1.  $6 = p - 8$

2.  $z + 5 = 4$

3.  $m - 4 = 12$

4.  $-10 = h - 4$

5.  $n + 14 = -5$

6.  $2 = a + 7$

Solve each equation using multiplication or division. Check your answer.

7.  $4t = -32$

8.  $-25 = -5x$

9.  $-3.2k = 16$

10.  $2.8r = 16.8$

11.  $\frac{m}{7} = 4$

12.  $25 = \frac{z}{-4}$

Solve each equation. Check your answer.

13.  $\frac{3}{4}b = 15$

14.  $-8 = \frac{2}{5}t$

15.  $\frac{9}{10}y = -36$

16.  $\frac{1}{2}m = \frac{6}{11}$

Name Homework " 1/7/18

### Addition and Subtraction Equation Review

$y - 3 = 6$  number added to each side _____ solution $y =$ _____	$2 = x - 1$  number added to each side _____ solution $x =$ _____
$5 = y - 4$  number added to each side _____ solution $y =$ _____	$1 + x = 7$  number subtracted from each side _____ solution $x =$ _____
$3 + d = 5$  number subtracted from each side _____ solution $d =$ _____	$2 + t = 8$  number subtracted from each side _____ solution $t =$ _____

Name \_\_\_\_\_

$3x = 6$  <div style="text-align: center;">divide each side</div> <div style="text-align: center;">solution <math>x =</math> _____</div>	$10 = 2y$  <div style="text-align: center;">divide each side</div> <div style="text-align: center;">solution <math>y =</math> _____</div>
$4t = 8$  <div style="text-align: center;">divide each side</div> <div style="text-align: center;">solution <math>t =</math> _____</div>	$6 = 2n$  <div style="text-align: center;">divide each side</div> <div style="text-align: center;">solution <math>n =</math> _____</div>
$3 = 3s$  <div style="text-align: center;">divide each side</div> <div style="text-align: center;">solution <math>s =</math> _____</div>	$5x = 10$  <div style="text-align: center;">divide each side</div> <div style="text-align: center;">solution <math>x =</math> _____</div>