

Warm-Up:

Evaluate if $a = 6$, $b = 3$, and $c = 4$.

1) $a^2 + b \cdot c \div a$

$$36 + 3 \cdot 4 \div 6$$

$$36 + 12 \div 6$$

$$36 + 2 = 38$$

2) $2b \div a + c$

$$2 \cdot 3 \div 6 + 4$$

$$6 \div 6 + 4$$

$$1 + 4 = 5$$

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40, 47, 36

36) $7^3 - \frac{2}{3}(13 \cdot 6 + 9)4$

$7^3 - \frac{2}{3}(87)4$

$343 - \frac{2}{3}(87)4$

$343 - 232$

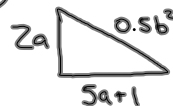
111

40) $100 \cdot 2 + 250 \cdot 2$

$200 + 500$

700 cells

47) $a = 9$ $b = 10$



$2a + 5a + 1 + 0.5b^2$

$2(9) + 5(9) + 1 + 0.5(10)^2$

$18 + 45 + 1 + 50$

114

B

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Section 1-3: Open Sentences

$$4 + 2 = 6$$

A sentence that contains an equal sign is an **equation**.

$$x + 3 = 12$$

Any equation with variables is called an **open sentence**.

When the variables are substituted to find a true sentence, it is called **solving the open sentence**.

$$x = 9$$

The value that was substituted is called the **solution**.

Example:

$2a = 10$ is an open sentence

The solution is 5.

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A **set** is a collection of a variety of numbers, usually within brackets $\{1, 2, 3, 4\}$.

Each number in a set is called an **element**.

A **replacement set** is a set containing possible solutions for an open sentence.

The **solution set** of an open sentence is all the different solutions for that open sentence.

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Examples:

1) Find the solution set for each equation if the replacement set is

{2, 3, 4, 5, 6}

a) $4a + 7 = 23$

$$4(2) + 7 \neq 23$$

$$4(3) + 7 \neq 23$$

$$4(4) + 7 = 23 \checkmark$$

$$4(5) + 7 \neq 23$$

$$4(6) + 7 \neq 23$$

{4}

b) $3(8 - b) = 6$

$$3(8 - 6) = 6$$

$$3(2) = 6 \checkmark$$

{6}

2) Solve $\frac{5(8 + 2)}{18 - (5 - 3)^3} = k$

$$\frac{5(10)}{18 - 8} = \frac{50}{10} \{5\}$$

$$k = 5$$

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An open sentence containing $<$, $>$, \leq , or \geq is called an **inequality**.

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Examples:

3) Carlos needs \$35 or more for a fishing trip. He has already bought a charter boat with his cash. Does Carlos need to save \$20, \$21, \$22, or \$23 to have enough money for the fishing trip? Find the solution set for $s + 13 \geq 35$, if the replacement set is $\{20, 21, 22, 23\}$

$$20 + 13 \not\geq 35$$

$$21 + 13 \not\geq 35$$

$$22 + 13 \geq 35 \checkmark$$

$$23 + 13 \geq 35 \checkmark$$

$$\{22, 23\}$$

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Examples:

4) A four-wheel drive tour of Canyon de Chelly National Monument in Arizona costs \$45 for the first vehicle and \$15 for each additional vehicle. How many vehicles can the Velo family take on the tour if they want to spend no more than \$100?

$j =$ additional vehicles

$$45 + 15j \leq 100$$

$$45 + 15(0) \leq 100$$

$$45 + 15(1) \leq 100$$

$$45 + 15(2) \leq 100$$

$$45 + 15(3) \leq 100$$

$$45 + 15(4) \not\leq 100$$

4 vehicles

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Homework: pg. 18-20 #14-20 even, 26-38 even, 53, 54, 56

Section 1-3 Vocab

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