

Equation: _____

Day 7 – Creating Equations from a Context (Complex)

1. Consider the following numbers:

45, 46, 47 102, 103, 104 30, 31, 32 99, 100, 101

a. What patterns do you notice?

+1, ration, natural, integers, consecutive

b. How does the second number compare to the first number?

+1

c. How does the third number compare to the first number?

+2

2. Consider the following numbers:

32, 34, 36 98, 100, 102 50, 52, 54 78, 80, 82

a. What patterns do you notice?

+2, EVEN CONSECUTIVE

b. How does the second number compare to the first number?

+2

c. How does the third number compare to the first number?

+4

3. Consider the following numbers:

45, 47, 49 103, 105, 107 29, 31, 33 157, 159, 161

a. What patterns do you notice?

ODD CONSECUTIVE, +2

b. How does the second number compare to the first number?

+2

c. How does the third number compare to the first number?

+4

Numbers that follow each other in order, without gaps, are called CONSECUTIVE.

4. Create an expression for if you didn't know the first number, but knew they were consecutive:

a. Pattern in Problem 1: $x, x+1, x+2$

b. Pattern in Problem 2: $x, x+2, x+4$

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c. Pattern in Problem 3: $x, x+2, x+4$

Notes
 x
 $45, 47, 49$
 $+2$
 $+4$

Consecutive Numbers

Consecutive Numbers Chart				
Type of Consecutive Numbers	Examples	Expressions for Terms		
		First	Second	Third
Consecutive Numbers	$\rightarrow 4, 5, 6$ $27, 28, 29$	x	$x+1$	$x+2$
Consecutive Even Numbers	$8, 10, 12$ $62, 64, 66$	x	$x+2$	$x+4$
Consecutive Odd Numbers	$23, 25, 27$ $89, 91, 93$	x	$x+2$	$x+4$

SAME

1. The sum of three consecutive numbers is 72. What is the smallest of these numbers?

Variables: x

Equation: $x + x+1 + x+2 = 72$
 $23, 24, 25$

$$\begin{aligned}
 x + x + 1 + x + 2 &= 72 \\
 3x + 3 &= 72 \\
 -3 & \quad -3 \\
 \hline
 3x &= 69 \\
 \frac{3x}{3} &= \frac{69}{3} \\
 x &= 23
 \end{aligned}$$

2. Find three consecutive odd integers whose sum is 261.

Variables: x

Equation: $x + x+2 + x+4 = 261$

$$\begin{aligned}
 x + x + 2 + x + 4 &= 261 \\
 3x + 6 &= 261 \\
 -6 & \quad -6 \\
 \hline
 3x &= 255
 \end{aligned}$$

$$\frac{3x}{3} = \frac{255}{3}$$

$85 + 87 + 89 = 261$
 $261 = 261 \checkmark$ $x = 85, 87, 89$