

Consecutive numbers are integers that are one apart. For example, 18 and 19 are consecutive numbers.

<u>**Consecutive Integers</u>**: numbers that are exactly one apart (for instance, 20 and 21 are consecutive integers).</u>

N + (N + 1) = Total - For 2 consecutive integers

N + (N + 1) + (N + 2) = Total - For 3 consecutive integers

N + (N + 1) + (N + 2) + (N + 3) = Total - For 4 consecutive integers

And so on.

<u>Consecutive Even Integers</u>: even numbers that are exactly 2 apart (for instance, 14 and 16 are consecutive even integers).

N + (N + 2) = Total For 2 consecutive even integers

N + (N + 2) + (N + 4) = Total For 3 consecutive even integers

N + (N + 2) + (N + 4) + (N + 6) = Total For 4 consecutive even integers

And so on.

<u>Consecutive Odd Integers</u>: odd numbers that are exactly 2 apart (for instance, 11 and 13 are consecutive odd integers).

N + (N + 2) = Total For 2 consecutive odd integers

N + (N + 2) + (N + 4) = Total For 3 consecutive odd integers

N + (N + 2) + (N + 4) + (N + 6) = Total For 4 consecutive odd integers

And so on.

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Let's apply all we've reviewed this far to a REAL, LIVE Consecutive numbers problem ©
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Sample Problem – Solve: The ages of Edna, Elisa and Elsa are consecutive integers. The sum of their ages is 117. What are there ages?

<u>Step 1</u> – Familiarize yourself with the problem situation.

- What type of problem is this? Answer: Consecutive numbers problem
- What formula is needed? Answer: N + (N + 1) + (N + 2) = Total Age

<u>Step 2</u> – Translate the problem into mathematical language.

• Underline the key phrases

The ages of Edna, Ellie and Elsa are <u>consecutive integers</u>, with <u>Edna being the youngest</u> and <u>Elsa</u> <u>being the oldest</u>. The <u>sum of their ages</u> <u>is 117</u>. <u>What are their ages</u>?

- Translate into mathematical language.
- 1. <u>Total age = 117</u>
- 2. Edna = N, Ellie = N+1, Elsa = N+2
- 3. <u>State the goal: What are their ages?</u>

<u>Step 3</u> – Solve the equation for the unknowns.

N + (N + 1) + (N + 2) = Total Age N + (N + 1) + (N + 2) = 117 3N + 3 = 117 3N = 114 N = 38Now don't stop just yet! We've found N, but we need to find everyone's age:

Edna = N = 38 Ellie = N + 1 = 38 + 1 = 39 Elsa = N + 2 = 38 + 2 = 40

<u>Step 4</u> – Check your answers in the original problem (see if the answers are reasonable). Well, let's do that. Let's put our answers back into the equation and see if they make sense:

N + (N + 1) + (N + 2) = Total Age 38 + 38 + 1 + 38 + 2 = 117 117 = 117!!!

Congratulations, you just successfully solved a consecutive numbers word problem!

<u>Step 5</u> – State the answer clearly (put units on the final answer).

- What was the question? Answer: What are their ages?
- Answer this question precisely using units. Their ages are: Edna = 38 Ellie = 39 Elsa = 40

That's all, Folks ☺!!!

Now it's your turn! Using the guide, solve each of the following problems.

Problem 1 – Solve:

The sum of two consecutive page numbers is 305. Find the page numbers.

<u>Step 1</u> – Familiarize yourself with the problem situation.

- What type of problem is this?
- What word formula is needed?

<u>Step 2</u> – Translate the problem into mathematical language.

• Underline the key phrases.

The sum of two consecutive page numbers is 305. Find the page numbers.

- Translate into mathematical language.
- 1. _____
- 2. _____
- 3. _____

<u>Step 3</u> –Solve the equation for the unknowns.

- What was the question?
- Answer this question precisely using units.

Problem 2 – Solve: The sum of three consecutive even integers is 168. What are the integers?

<u>Step 1</u> – Familiarize yourself with the problem situation.

- What type of problem is this?
- What formula is needed?

<u>Step 2</u> – Translate the problem into mathematical language.

• Underline the key phrases.

The sum of three consecutive even integers is 168. What are the integers?

- Translate into mathematical language.
- 1. _____
- 2. _____
- 3. _____

<u>Step 3</u> – Solve the equation for the unknowns.

Congratulations, you just successfully solved a geometric word problem!

- What was the question?
- Answer this question precisely using units.

Problem 3 – Solve: The sum of three consecutive odd integers is 177. What are the three integers?

<u>Step 1</u> – Familiarize yourself with the problem situation.

- What type of problem is this?
- What word formula is needed?

<u>Step 2</u> – Translate the problem into mathematical language.

• Underline the key phrases.

The sum of three consecutive odd integers is 177. What are the three integers?

<u>Step 3</u> – Solve the equation for the unknowns.

Díd you solve for ALL of your unknowns???

<u>Step 4</u> – Check your answers in the original problem (see if the answers are reasonable).

- What was the question?
- Answer this question precisely using units.

Problem 4 – Solve: The sum of the page numbers on a facing page of a book is 71. What are the page numbers?

<u>Step 1</u> – Familiarize yourself with the problem situation.

- What type of problem is this?
- What word formula is needed?

<u>Step 2</u> – Translate the problem into mathematical language.

• Underline the key phrases.

The sum of the page numbers on a facing page of a book is 71. What are the page numbers?

- Translate into mathematical language.
- 1. _____
- 2. _____
- 3. _____

<u>Step 3</u> – Solve the equation for the unknowns.

Congratulations, you just successfully solved a geometric word problem!

- What was the question?
- Answer this question precisely using units.

Problem 5 – Solve:

This year, Joe, Jerry, and Jacob's ages are all odd integers (Joe is the oldest and Jacob is the youngest). If their ages are consecutive odd integers that add up to 189, how old is each person?

<u>Step 1</u> – Familiarize yourself with the problem situation.

- What type of problem is this?
- What word formula is needed?

<u>Step 2</u> – Translate the problem into mathematical language.

• Underline the key phrases.

This year, Joe, Jerry, and Jacob's ages are all odd integers (Joe is the oldest and Jacob is the youngest). If their ages are consecutive odd integers that add up to 189, how old is each person?

- Translate into mathematical language.

<u>Step 3</u> – Solve the equation for the unknowns.

- What was the question?
- Answer this question precisely using units.

Problem 6 – Solve:

Helen, Ray, and Jeremy each have bananas (Helen has the most bananas and Jeremy has the least). If each person has a consecutive even number of bananas, and the total number of bananas is 174, how many bananas does each person have?

<u>Step 1</u> – Familiarize yourself with the problem situation.

- What type of problem is this?
- What word formula is needed?

<u>Step 2</u> – Translate the problem into mathematical language.

• Underline the key phrases.

Helen, Ray, and Jeremy each have bananas (Helen has the most bananas and Jeremy has the least). If each person has a consecutive even number of bananas, and the total number of bananas is 174, how many bananas does each person have?

- Translate into mathematical language.
- 1.

 2.
- 3. _____

<u>Step 3</u> – Solve the equation for the unknowns.

- What was the question?
- Answer this question precisely using units.