

CONSECUTIVE INTEGERS

What are consecutive integers?

A consecutive number starts with a number, say 4.

The next consecutive number would be 5.

4, 5, 6, . . . and so on.

Def: Consecutive integers are two or more integers in a sequence, each of which is one more than the integer before it it.

The Equation:

Consecutive integers may be represented by

$x, x + 1, x + 2, \dots$, where x is an integer.

4, 4+1, 4+2, ...

1, 5, 6 . . .

The sum of two consecutive integers is 5.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 5$$

$$2x + 1 = 5$$

$$2x + 1 - 1 = 5 - 1$$

$$\frac{2x}{2} = \frac{4}{2}$$

$$x = 2$$

Check: $2 + 3 = 5$

$$x + 1 = 3$$

The two integers with the sum of 5 are 2 and 3.

Consecutive *even* integers are even numbers in numerical order. 4, 6, 8 . . .

Consecutive *odd* integers are odd numbers in numerical order. 5, 7, 9 . . .

The Equation (same for both even and odd integers):

Consecutive integers may be represented by

$x, x + 2, x + 4, \dots$, where x is an integer.

4, 4+2, 4+4, ... 4, 6, 8 . . .

5, 5+2, 5+4, ... 5, 7, 9 . . .

CONSECUTIVE INTEGERS

NAME: _____

1. The sum of two consecutive integers is 47. Find the two integers.
2. The sum of two consecutive integers is 163. Find the two integers.
3. The sum of two consecutive integers is 25. Find the two integers.
4. The sum of two consecutive integers is 51. Find the two integers.
5. The sum of two consecutive integers is 131. Find the two integers.
6. The sum of two consecutive integers is 173. Find the two integers.
7. The sum of two consecutive integers is 207. Find the two integers.

CONSECUTIVE INTEGERS

NAME: Solutions

1. The sum of two consecutive integers is 47. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 47$$

$$2x + 1 = 47$$

$$2x + 1 - 1 = 47 - 1$$

$$\frac{2x}{2} = \frac{46}{2}$$

$$x = 23$$

$$x + 1 = 24$$

$$\text{Check: } 23 + 24 = 47$$

2. The sum of two consecutive integers is 163. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 163$$

$$2x + 1 = 163$$

$$2x + 1 - 1 = 163 - 1$$

$$\frac{2x}{2} = \frac{162}{2}$$

$$x = 81$$

$$x + 1 = 82$$

$$\text{Check: } 81 + 82 = 163$$

3. The sum of two consecutive integers is 25. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 25$$

$$2x + 1 = 25$$

$$2x + 1 - 1 = 25 - 1$$

$$\frac{2x}{2} = \frac{24}{2}$$

$$x = 12$$

$$x + 1 = 13$$

$$\text{Check: } 12 + 13 = 25$$

4. The sum of two consecutive integers is 51. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 51$$

$$2x + 1 = 51$$

$$2x + 1 - 1 = 51 - 1$$

$$\underline{2x = 50}$$

$$\frac{2}{2} = \frac{50}{2}$$

$$x = 25$$

$$\text{Check: } 25 + 26 = 51$$

$$x + 1 = 26$$

5. The sum of two consecutive integers is 131. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 131$$

$$2x + 1 = 131$$

$$2x + 1 - 1 = 131 - 1$$

$$\underline{2x = 130}$$

$$\frac{2}{2} = \frac{130}{2}$$

$$x = 65$$

$$\text{Check: } 65 + 66 = 131$$

$$x + 1 = 66$$

6. The sum of two consecutive integers is 173. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 173$$

$$2x + 1 = 173$$

$$2x + 1 - 1 = 173 - 1$$

$$\underline{2x = 172}$$

$$\frac{2}{2} = \frac{172}{2}$$

$$x = 86$$

$$\text{Check: } 86 + 87 = 173$$

$$x + 1 = 87$$

7. The sum of two consecutive integers is 207. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 207$$

$$2x + 1 = 207$$

$$2x + 1 - 1 = 207 - 1$$

$$\underline{2x} = \underline{206}$$

$$\frac{2}{2} = \frac{206}{2}$$

$$x = 103$$

$$x + 1 = 104$$

$$\text{Check: } 103 + 104 = 207$$

CONSECUTIVE EVEN INTEGERS

NAME: _____

1. The sum of two consecutive even integers is 18. Find the two integers.
2. The sum of two consecutive even integers is 26. Find the two integers.
3. The sum of two consecutive even integers is 74. Find the two integers.
4. The sum of two consecutive even integers is 114. Find the two integers.
5. The sum of two consecutive even integers is 178. Find the two integers.
6. The sum of two consecutive even integers is 250. Find the two integers.
7. The sum of two consecutive even integers is 406. Find the two integers.

CONSECUTIVE EVEN INTEGERS

NAME: _____ solutions _____

1. The sum of two consecutive even integers is 18. Find the two integers.

Let x = first even integer

Let $x + 2$ = second even integer

first even integer + second even integer = sum

$$\begin{array}{rccccccc} & x & & + & & x + 2 & & = & 18 \\ & & & & & & & & \end{array}$$

$$2x + 2 = 18$$

$$2x + 2 - 2 = 18 - 2$$

$$\underline{2x} = \underline{16}$$

$$\frac{2}{2} \quad \frac{16}{2}$$

$$x = 8$$

$$x + 2 = 10$$

Check: $8 + 10 = 18$

2. The sum of two consecutive even integers is 26. Find the two integers.

Let x = first even integer

Let $x + 2$ = second even integer

first even integer + second even integer = sum

$$\begin{array}{rccccccc} & x & & + & & x + 2 & & = & 26 \\ & & & & & & & & \end{array}$$

$$2x + 2 = 26$$

$$2x + 2 - 2 = 26 - 2$$

$$\underline{2x} = \underline{24}$$

$$\frac{2}{2} \quad \frac{24}{2}$$

$$x = 12$$

$$x + 2 = 14$$

Check: $12 + 14 = 26$

3. The sum of two consecutive even integers is 74. Find the two integers.

Let x = first even integer

Let $x + 2$ = second even integer

first even integer + second even integer = sum

$$x + x + 2 = 74$$

$$2x + 2 = 74$$

$$2x + 2 - 2 = 74 - 2$$

$$\frac{2x}{2} = \frac{72}{2}$$

$$x = 36$$

$$x + 2 = 38$$

$$\text{Check: } 36 + 38 = 74$$

4. The sum of two consecutive even integers is 114. Find the two integers.

Let x = first even integer

Let $x + 2$ = second even integer

first even integer + second even integer = sum

$$x + x + 2 = 114$$

$$2x + 2 = 114$$

$$2x + 2 - 2 = 114 - 2$$

$$\frac{2x}{2} = \frac{112}{2}$$

$$x = 56$$

$$x + 2 = 58$$

$$\text{Check: } 56 + 58 = 114$$

5. The sum of two consecutive even integers is 178. Find the two integers.

Let x = first even integer

Let $x + 2$ = second even integer

first even integer + second even integer = sum

$$x + x + 2 = 178$$

$$2x + 2 = 178$$

$$2x + 2 - 2 = 178 - 2$$

$$\frac{2x}{2} = \frac{176}{2}$$

$$x = 88$$

$$x + 2 = 90$$

$$\text{Check: } 88 + 90 = 178$$

6. The sum of two consecutive even integers is 250. Find the two integers.

Let x = first even integer

Let $x + 2$ = second even integer

$$\begin{array}{rccccccc} \text{first even integer} & + & \text{second even integer} & = & \text{sum} & & \\ x & + & x + 2 & = & 250 & & \end{array}$$

$$2x + 2 = 250$$

$$2x + 2 - 2 = 250 - 2$$

$$\underline{2x = 248}$$

$$\frac{2}{2} = \frac{248}{2}$$

$$x = 124$$

$$\text{Check: } 124 + 126 = 250$$

$$x + 2 = 126$$

7. The sum of two consecutive even integers is 406. Find the two integers.

Let x = first even integer

Let $x + 2$ = second even integer

$$\begin{array}{rccccccc} \text{first even integer} & + & \text{second even integer} & = & \text{sum} & & \\ x & + & x + 2 & = & 406 & & \end{array}$$

$$2x + 2 = 406$$

$$2x + 2 - 2 = 406 - 2$$

$$\underline{2x = 404}$$

$$\frac{2}{2} = \frac{404}{2}$$

$$x = 202$$

$$\text{Check: } 202 + 204 = 406$$

$$x + 2 = 204$$

CONSECUTIVE ODD INTEGERS

NAME: _____

1. The sum of two consecutive odd integers is 28. Find the two integers.
2. The sum of two consecutive odd integers is 52. Find the two integers.
3. The sum of two consecutive odd integers is 150. Find the two integers.
4. The sum of two consecutive odd integers is 92. Find the two integers.
5. The sum of two consecutive odd integers is 188. Find the two integers.
6. The sum of two consecutive odd integers is 348. Find the two integers.
7. The sum of two consecutive odd integers is 508. Find the two integers.

CONSECUTIVE ODD INTEGERS

NAME: solutions

1. The sum of two consecutive odd integers is 28. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

first even integer + second even integer = sum

$$x + x + 2 = 28$$

$$2x + 2 = 28$$

$$2x + 2 - 2 = 28 - 2$$

$$\frac{2x}{2} = \frac{26}{2}$$

$$x = 13$$

$$x + 2 = 15$$

$$\text{Check: } 13 + 15 = 28$$

2. The sum of two consecutive odd integers is 52. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

first even integer + second even integer = sum

$$x + x + 2 = 52$$

$$2x + 2 = 52$$

$$2x + 2 - 2 = 52 - 2$$

$$\frac{2x}{2} = \frac{50}{2}$$

$$x = 25$$

$$x + 2 = 27$$

$$\text{Check: } 25 + 27 = 52$$

3. The sum of two consecutive odd integers is 156. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

$$\begin{array}{rcl} \text{first even integer} + \text{second even integer} & = & \text{sum} \\ x & + & x + 2 & = & 156 \end{array}$$

$$2x + 2 = 156$$

$$2x + 2 - 2 = 156 - 2$$

$$\underline{2x = 154}$$

$$\frac{2}{2} = \frac{154}{2}$$

$$x = 77$$

$$\text{Check: } 77 + 79 = 156$$

$$x + 2 = 79$$

4. The sum of two consecutive odd integers is 108. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

$$\begin{array}{rcl} \text{first even integer} + \text{second even integer} & = & \text{sum} \\ x & + & x + 2 & = & 108 \end{array}$$

$$2x + 2 = 108$$

$$2x + 2 - 2 = 108 - 2$$

$$\underline{2x = 106}$$

$$\frac{2}{2} = \frac{106}{2}$$

$$x = 53$$

$$\text{Check: } 53 + 55 = 108$$

$$x + 2 = 55$$

5. The sum of two consecutive odd integers is 164. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

$$\begin{array}{rcl} \text{first even integer} + \text{second even integer} & = & \text{sum} \\ x & + & x + 2 & = & 164 \end{array}$$

$$2x + 2 = 164$$

$$2x + 2 - 2 = 164 - 2$$

$$\underline{2x = 162}$$

$$\frac{2}{2} = \frac{162}{2}$$

$$x = 81$$

$$\text{Check: } 81 + 83 = 164$$

$$x + 2 = 83$$

6. The sum of two consecutive odd integers is 476. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

$$\begin{array}{rccccccc} \text{first even integer} & + & \text{second even integer} & = & \text{sum} & & \\ x & + & x + 2 & = & 476 & & \end{array}$$

$$2x + 2 = 476$$

$$2x + 2 - 2 = 476 - 2$$

$$\underline{2x = 474}$$

$$\frac{2}{2} = \frac{474}{2}$$

$$x = 237$$

$$\text{Check: } 237 + 239 = 476$$

$$x + 2 = 239$$

7. The sum of two consecutive odd integers is 724. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

$$\begin{array}{rccccccc} \text{first even integer} & + & \text{second even integer} & = & \text{sum} & & \\ x & + & x + 2 & = & 724 & & \end{array}$$

$$2x + 2 = 724$$

$$2x + 2 - 2 = 724 - 2$$

$$\underline{2x = 722}$$

$$\frac{2}{2} = \frac{722}{2}$$

$$x = 361$$

$$\text{Check: } 361 + 363 = 724$$

$$x + 2 = 363$$

CONSECUTIVE INTEGERS

NAME: _____

1. The sum of two consecutive integers is 183. Find the two integers.
2. The sum of two consecutive even integers is 94. Find the two integers.
3. The sum of two consecutive integers is 291. Find the two integers.
4. The sum of two consecutive odd integers is 128. Find the two integers.
5. The sum of two consecutive even integers is 86. Find the two integers.
6. The sum of two consecutive integers is 115. Find the two integers.
7. The sum of two consecutive even integers is 354. Find the two integers.

CONSECUTIVE INTEGERS

NAME: _____ solutions _____

1. The sum of two consecutive integers is 183. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 183$$

$$2x + 1 = 183$$

$$2x + 1 - 1 = 183 - 1$$

$$\underline{2x = 182}$$

$$\frac{2}{2} = \frac{182}{2}$$

$$x = 91$$

$$x + 1 = 92$$

$$\text{Check: } 91 + 92 = 183$$

2. The sum of two consecutive even integers is 94. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

first even integer + second even integer = sum

$$x + x + 2 = 94$$

$$2x + 2 = 94$$

$$2x + 2 - 2 = 94 - 2$$

$$\underline{2x = 92}$$

$$\frac{2}{2} = \frac{92}{2}$$

$$x = 46$$

$$x + 2 = 48$$

$$\text{Check: } 46 + 48 = 94$$

3. The sum of two consecutive integers is 291. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 291$$

$$2x + 1 = 291$$

$$2x + 1 - 1 = 291 - 1$$

$$\frac{2x}{2} = \frac{290}{2}$$

$$x = 145$$

$$x + 1 = 146$$

$$\text{Check: } 145 + 146 = 291$$

4. The sum of two consecutive odd integers is 128. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

first even integer + second even integer = sum

$$x + x + 2 = 128$$

$$2x + 2 = 128$$

$$2x + 2 - 2 = 128 - 2$$

$$\frac{2x}{2} = \frac{126}{2}$$

$$x = 63$$

$$x + 2 = 65$$

$$\text{Check: } 63 + 65 = 128$$

5. The sum of two consecutive even integers is 86. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

first even integer + second even integer = sum

$$x + x + 2 = 86$$

$$2x + 2 = 86$$

$$2x + 2 - 2 = 86 - 2$$

$$\frac{2x}{2} = \frac{84}{2}$$

$$x = 42$$

$$x + 2 = 44$$

$$\text{Check: } 42 + 44 = 86$$

6. The sum of two consecutive integers is 115. Find the two integers.

Let x = first integer

Let $x + 1$ = second integer

first integer + second integer = sum

$$x + x + 1 = 115$$

$$2x + 1 = 115$$

$$2x + 1 - 1 = 115 - 1$$

$$\underline{2x = 114}$$

$$\frac{2}{2} = \frac{114}{2}$$

$$x = 57$$

$$x + 1 = 58$$

$$\text{Check: } 57 + 58 = 115$$

7. The sum of two consecutive even integers is 354. Find the two integers.

Let x = first odd integer

Let $x + 2$ = second odd integer

first even integer + second even integer = sum

$$x + x + 2 = 354$$

$$2x + 2 = 354$$

$$2x + 2 - 2 = 354 - 2$$

$$\underline{2x = 352}$$

$$\frac{2}{2} = \frac{352}{2}$$

$$x = 176$$

$$x + 2 = 178$$

$$\text{Check: } 176 + 178 = 354$$