

True or False?

INVESTIGATION

Consecutive whole numbers come one after the other.
For example, 6 and 7 are consecutive, and so are 49 and 50.

1. Here are some ideas about consecutive whole numbers.
Investigate each idea to see if it is true. Explain why it is or isn't true.

- a. Add two consecutive whole numbers.

The sum is always odd.

$$3 + 4 = 7$$

$$49 + 50 = 99$$

- b. Add three consecutive whole numbers.

The sum can always be divided by 3 with no remainder.

$$6 + 7 + 8 = 21 \quad 21 \div 3 = 7$$

$$33 + 34 + 35 = 102 \quad 102 \div 3 = 34$$

- c. Take three consecutive whole numbers and multiply them together.

No matter which numbers you choose, the largest number that the product can be divided by with no remainder is 3.

$$3 \times 4 \times 5 = 60 \quad 60 \div 3 = 20$$

$$11 \times 12 \times 13 = 1716 \quad 1716 \div 3 = 572$$

2. Look at these four consecutive whole numbers:

$$4 \quad 5 \quad 6 \quad 7$$

$$4 \times 7 = 28$$

$$5 \times 6 = 30$$

$$8 \quad 9 \quad 10 \quad 11$$

$$8 \times 11 = 88$$

$$9 \times 10 = 90$$

- a. Is the following true or false?

With four consecutive whole numbers, the product of the inside two numbers is always two more than the product of the outside two numbers.

- b. Explain your answer.