

Choose any three whole numbers, find the differences between them all, and find the product of the differences.

For example, if your three whole numbers are 7, 4 and 12, the differences are:

$$12 - 7 = 5$$

$$12 - 4 = 8$$

$$7 - 4 = 3$$

The product of the differences is

$$3 \times 5 \times 8 = 120$$

Try a few examples.

What do you notice?

Can you explain what you've noticed?

Now choose any four whole numbers, find the differences between them all, and find the product of the differences.

For example, if your four whole numbers are 7, 4, 12 and 6, the differences are:

$$7 - 4 = 3$$

$$12 - 7 = 5$$

$$7 - 6 = 1$$

$$12 - 4 = 8$$

$$6 - 4 = 2$$

$$12 - 6 = 6$$

The product of the differences is

$$3 \times 5 \times 1 \times 8 \times 2 \times 6 = 1440$$

Try a few examples.

What do you notice?

Can you explain what you've noticed?