

# SHAPE PRODUCTS

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## 1 Exercise

1. First, let's have a look at product H ( $\diamond \times \hexagon = \hexagon$ ).  $\hexagon$  is probably 0 or  $\diamond = 1$ . But in multiple G ( $\square \times \star = \hexagon$ )  $\hexagon$  is a product of two factors, so  $\hexagon \neq 0$ ,  $\diamond = 1$ .

2. Product F ( $\blacktriangledown \times \frown = \blacktriangledown$ ) is very similar to product H, because there is the same number on the left and the right side of "=" symbol. At products like this we know that only 0 and 1 is possible. But we have already used 1, so  $\blacktriangledown = 0$ .

3. Look at product D ( $\square \times \square = \circ$ ). So we can write  $\square \times \square$  instead of  $\circ$ . We can use this in multiple B ( $\square \times \circ = \frown$ ) - we can put  $\square \times \square$  instead  $\circ$  into product. This is a cube of natural number now. We have already used 0 and 1, so 2 is the only number we can use.  $\square = 2$ ,  $\frown = 8$ . We can calculate  $\circ$  too.  $\circ = 4$ .

4. Let's have a look at product C ( $\blacksquare \times \blacksquare = \star$ ). We can see this as a square of natural number. We have already used 0, 1 and 2, so  $\blacksquare = 3$ ,  $\star = 9$ .

5. We know  $\square$  and  $\circ$ , so we can calculate  $\bullet$  using product A ( $\blacksquare \times \circ = \bullet$ )  
 $\bullet = 12$

6. We can calculate  $\blacktriangle$ . We just have to look at multiple E ( $\blacktriangle \times \square = \bullet$ ), solve the equation and we get:  $\blacktriangle = 6$ .

7. We know just symbol  $\square$  (2) in product G ( $\square \times \star = \hexagon$ ). The numbers which have left are 5, 7, 10 and 11. There is just one number that we can get by multiplication with 2. This number is 10. So:  $\hexagon = 10$ ,  $\star = 5$ .

8. There are two numbers left. These numbers are 7 and 11.

## 2 Exercise - extension

### 2.1 First part

1. When we are solving this exercise we just have to multiply with 3. But we mustn't forget that some multiples are two digit.

2. SOLUTION:  $142857 \times 3 = 428571$

### 2.2 Second part

1. SOLUTION:  $285714 \times 3 = 857142$

2. These exercises are interesting, because when we multiply these numbers with 3 we just have to put 1 or 2 to other side.