

Name:
Period:

The Zero-product Property

Here is a question that you will eventually answer at the end of this worksheet
"if $a \cdot b = 0$, then what must be true about a or b?"

Part 1 Calculate the following:

$$4 \cdot 3 = \underline{\quad\quad\quad} \quad 7 \cdot 1 = \underline{\quad\quad\quad}$$

$$5 \cdot 8 = \underline{\quad\quad\quad} \quad 4 \cdot 8 = \underline{\quad\quad\quad}$$

$$3 \cdot 2 = \underline{\quad\quad\quad} \quad 5 \cdot 0 = \underline{\quad\quad\quad}$$

$$4 \cdot 0 = \underline{\quad\quad\quad} \quad 0 \cdot 1 = \underline{\quad\quad\quad}$$

$$9 \cdot 1 = \underline{\quad\quad\quad} \quad 0 \cdot 0 = \underline{\quad\quad\quad}$$

$$0 \cdot 3 = \underline{\quad\quad\quad} \quad 4 \cdot 4 = \underline{\quad\quad\quad}$$

Part 2 Answer the following questions

What do you notice about the products from part 1? When does each product equal zero?

If I know that a times 6 is zero (in other words, if I know that $a \cdot 6 = 0$) what must a be?
How do you know?

If I know that 12 times b is zero (in other words, if I know that $12 \cdot b = 0$) what must b be?
How do you know?

So if I know that $a \cdot b = 0$, what must be true about a or b?