Zero in Division

What do you think 6 ÷ 0 would be? 

We could think of sharing 6 bananas between 0 persons. But that doesn't make sense. We can't even talk about how many each one gets, because there is no one around.

We could think of making groups of 0. How many groups would you get? Again, you would not get anywhere, you would never get those 6 bananas put into groups of 0.

You might think that maybe 6 ÷ 0 = 0 or that each person gets zero bananas. Check it with multiplication! You would get 0 × 0 = 6, which is not true! So 6 ÷ 0 = 0 does not work either.

Dividing six by zero (6 ÷ 0) is "undefined." Basically, you can't do it.

What about 0 ÷ 0? Couldn't we say 0 ÷ 0 = 0?

0 ÷ 0 is hard. The answer could be zero, but actually the answer could be *any* number :

Let's say that 0 ÷ 0 = 2. Check by multiplying: 2 × 0 = 0; OK. So 2 would work.
Let's say that 0 ÷ 0 = 0. Check by multiplying: 0 × 0 = 0; OK. So 0 would work.
Let's say that 0 ÷ 0 = 11. Check by multiplying: 11 × 0 = 0; OK. So 11 would work.

So, we cannot find just ONE answer. We say that the answer cannot be determined.

Dividing a number by zero doesn't work.

What about zero divided by something? That is perfectly fine.

0 ÷ 5 = 0 "If there are zero bananas and five people, each person gets 0 bananas."

1. Divide. CROSS OUT all the problems that are impossible. Think about sharing bananas.

a. 4 ÷ 1 = _____ 4 ÷ 0 = _____	**b.** 14 ÷ 14 = _____ 0 ÷ 0 = _____	**c.** 1 ÷ 1 = _____ 7 ÷ 0 = _____	**d.** 0 ÷ 5 = _____ 5 ÷ 5 = _____
e. 0 ÷ 1 = _____ 0 ÷ 4 = _____	**f.** 0 ÷ 14 = _____ 14 ÷ 0 = _____	**g.** 0 ÷ 3 = _____ 0 ÷ 1 = _____	**h.** 10 ÷ 10 = _____ 1 ÷ 1 = _____

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