

Name: Class:

Find two numbers based on sum, differences, product, and quotient

a. The sum of two numbers **a** and **b** is 24 and their quotient is 1. Find the two numbers.

b. The product of two numbers **x** and **y** is 100 and their difference is 21. Find the two numbers.

c. Find two numbers whose sum is 11 and product is 24.



Name: Class:

Find two numbers based on sum, differences, product, and quotient

- a. The sum of two numbers **a** and **b** is 24 and their quotient is 1. Find the two numbers.

Let's try to deduce two equations with a and b as variables

So, $a + b = 24$ 1 the sum of a and b

$a \div b = 1$ 2 the quotient of a and b

Now let's try to find a using equation 1

$$a + b = 24$$

$$a = 24 - b$$

then, let's substitute $24 - b$ in

equation 2 in place of a

$$\frac{a}{b} = 1$$

$$\frac{24-b}{b} = \frac{1}{1}$$

$$24 - b = b$$

$$24 = b + b, 24 = 2b, b = \frac{24}{2}, b = 12$$

Finally, let's substitute the value of b in equation 1

$$a + 12 = 24$$

$$a = 24 - 12$$

$$a = 12$$

Therefore, the two numbers are 12 and 12. ($a = 12, b = 12$)

- b. The product of two numbers **x** and **y** is 100 and their difference is 21. Find the two numbers.

Let's try to think of two numbers whose product is 100.

We have, $10 \times 10 = 100$, $20 \times 5 = 100$, $25 \times 4 = 100$, $50 \times 2 = 100$, $100 \times 1 = 100$

Now, pick out two pairs of numbers from above whose difference is 21.

Looking at the expressions above $25 - 4 = 21$,

you see that 25 and 4 gives a difference of 21

Therefore, the two numbers are 25 and 4.

- c. Find two numbers whose sum is 11 and product is 24.

Let's try to think of two pairs of numbers whose sum is 11.

we have, $10 + 1 = 11$, $9 + 2 = 11$, $8 + 3 = 11$, $7 + 4 = 11$, $6 + 5 = 11$

Now, pick out two pairs of numbers from above whose product is 24.

Looking at the expressions above $8 \times 3 = 24$,

you see that 8 and 3 gives a product of 24.

So, the two numbers are 8 and 3.

