

Do - Now

THE RATIOS 5:3 AND 10:6 ARE EQUIVALENT RATIOS.

1. Is the ratio 15:12 equivalent to these? Explain your reasoning.

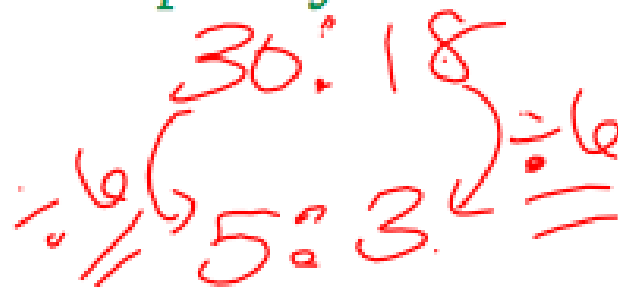
No!



2. Is the ratio 30:18 equivalent to these? Explain your reasoning.

Yes!

$$\frac{30 \div 6}{18 \div 6} = \frac{5}{3}$$



3. Give two more examples of ratios that are equivalent to 5:3.

$$25:15$$

$$\times 6 \quad 6 \begin{matrix} 10:6 \\ 60:36 \end{matrix} \times 6$$

Name _____ Date _____

Equivalent Ratios

What are equivalent ratios?

...

FINDING EQUIVALENT RATIOS USING THE MULTIPLICATION TABLE:

Use the multiplication table to write two ratios equivalent to 10:14.

STEPS:

1. Find 10 and 14 in the same row.
2. Look at the columns for 10 and 14.

Choose a number from each column. Make sure that the numbers you choose are in the same row.

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

3. Write the new ratios.

...



YOU TRY:

Use the multiplication table to write two ratios that are equivalent to 6:16.

FINDING EQUIVALENT RATIOS USING MULTIPLICATION OR DIVISION:

Use multiplication or division to write two ratios that are equivalent to 8:6.

$$8:6 = 16:12 = 4:3$$

$$\frac{8 \times 2}{6 \times 2} = \frac{16}{12}$$

$$\frac{8 \div 2}{6 \div 2} = \frac{4}{3}$$

STEPS:

1. Multiply or divide the numerator and denominator by the same number.

2. Write the new ratios.

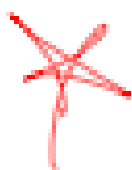
YOU TRY:

~~1. Use multiplication or division to write two ratios that are equivalent to 8:10.~~

2. Complete the table using equivalent ratios.

4	8	12	16
3	6	9	12

DETERMINING WHETHER TWO RATIOS ARE EQUIVALENT



Determine if $\frac{4}{10}$ and $\frac{14}{35}$ are equivalent ratios.

STEPS:

Yes because they both simplify to 2:5.

1. Simplify each ratio.

2. Compare each ratio - if they are the same, they are equivalent.

YOU TRY: Determine if the following ratios are equivalent, $\frac{21}{14}$ and $\frac{18}{10}$

Name _____ Date _____

Rates

Vocabulary:

A rate is a ratio that compares two quantities measured in different units.

For example: Suppose you read 150 pages in 4 days. Your reading rate would be $\frac{150 \text{ pages}}{4 \text{ days}}$.

Express as a rate.

1. 120 students for every 3 buses

$$\frac{120 \text{ students}}{3 \text{ buses}}$$



2. \$3.28 for 10 pencils

$$\frac{\$3.28}{10 \text{ pencils}}$$

3. \$274 for 40 hours of work

$$\frac{\$274}{40 \text{ hours}}$$