

PROPORTIONS

def

A PROPORTION IS AN EQUATION THAT RELATES TWO EQUIVALENT RATIOS.

EX: $\frac{1}{2} = \frac{2}{4}$

RATIOS ARE IN PROPORTION IF THEY CAN BE SIMPLIFIED TO THE SAME RATIO.

SIMPLIFY

$$\frac{1}{2} = \frac{5 \div 5}{10 \div 5} = \frac{1}{2}$$

YES, PROPORTION

$$\frac{1}{2} = \frac{10 \div 2}{16 \div 2} = \frac{5}{8}$$

NO, PROPORTION

YOU CAN ALSO USE RATIO TABLE METHOD.

RATIO TABLE

$$\frac{1}{2} = \frac{5}{10}$$

(x5)

Yes, PROPORTION

$$\frac{1}{2} = \frac{10}{16}$$

(x10)

NO, NOT A PROPORTION

YOU CAN ALSO USE CROSS-MULTIPLICATION (BUTTERFLY METHOD)

BUTTERFLY (CROSS-MULT)

$1 \times 10 = 10$ $2 \times 5 = 10$

$$\frac{1}{2} = \frac{5}{10}$$

Yes, PROPORTION

$1 \times 16 = 16$ $2 \times 10 = 20$

$$\frac{1}{2} = \frac{10}{16}$$

NO NOT A PROPORTION

YOU TRY:

1) $\frac{4}{5} \stackrel{=}{\neq} \frac{12}{15}$ 2) $\frac{8}{12} \stackrel{=}{\neq} \frac{2}{3}$

$\frac{4}{5} \quad \frac{12 \div 3}{15 \div 3} \quad \frac{4}{5}$ $\frac{4 \times 3}{5 \times 3} \quad \frac{12}{15}$ $4 \times 15 = 60 \quad 12 \times 5 = 60$

~~$\frac{4}{5} \quad \frac{12}{15}$~~

3) $\frac{7}{8} \stackrel{=}{\neq} \frac{8}{9}$ 4) $\frac{4}{5} \stackrel{=}{\neq} \frac{7}{8}$

$4 \times 8 = 32$ $5 \times 7 = 35$

SIMPLIFIED ALREADY
NOT EQUAL

5) $\frac{4}{12} \stackrel{=}{\neq} \frac{5}{18}$ 6) $\frac{1}{3} \stackrel{=}{\neq} \frac{1}{6}$

$\frac{4 \div 4}{12 \div 4} \quad \frac{5 \div 5}{18 \div 5}$ $1 \times 6 = 6$ $3 \times 1 = 3$

$\frac{1}{3} \quad \frac{1}{3}$

SIMPLIFIED =