

Proportions

State if each pair of ratios forms a proportion.

1) $\frac{4}{2}$ and $\frac{20}{6}$

2) $\frac{3}{2}$ and $\frac{18}{8}$

3) $\frac{4}{3}$ and $\frac{16}{12}$

4) $\frac{4}{3}$ and $\frac{8}{6}$

5) $\frac{12}{24}$ and $\frac{3}{4}$

6) $\frac{6}{9}$ and $\frac{2}{3}$

Solve each proportion.

7) $\frac{10}{k} = \frac{8}{4}$

8) $\frac{m}{10} = \frac{10}{3}$

9) $\frac{2}{x} = \frac{7}{9}$

10) $\frac{3}{x} = \frac{7}{10}$

$$11) \frac{4}{9} = \frac{2}{x}$$

$$12) \frac{6}{a} = \frac{3}{8}$$

$$13) \frac{8n}{8} = \frac{8}{3}$$

$$14) \frac{7}{9} = \frac{a}{5}$$

$$15) \frac{p}{8} = \frac{13}{2}$$

$$16) \frac{3}{13} = \frac{v}{3}$$

$$17) \frac{10}{12} = \frac{2}{n}$$

$$18) \frac{11}{10} = \frac{r}{11}$$

$$19) \frac{x}{9} = \frac{7}{14}$$

$$20) \frac{a}{10} = \frac{11}{14}$$

$$21) \frac{v}{12} = \frac{10}{2}$$

$$22) \frac{6}{14} = \frac{5}{n}$$

Proportions

State if each pair of ratios forms a proportion.

1) $\frac{4}{2}$ and $\frac{20}{6}$ $\frac{5}{3} \neq 1$
 $\frac{4}{2} \xrightarrow{\cdot 5} \frac{20}{6}$
 $\frac{4}{2} \xrightarrow{\cdot 3} \frac{12}{6}$
No

2) $\frac{3}{2}$ and $\frac{18}{8}$ $\frac{6}{4} \neq 1$
 $\frac{3}{2} \xrightarrow{\cdot 6} \frac{18}{8}$
 $\frac{3}{2} \xrightarrow{\cdot 4} \frac{12}{8}$
No

3) $\frac{4}{3}$ and $\frac{16}{12}$ $\frac{4}{4} = 1$
 $\frac{4}{3} \xrightarrow{\cdot 4} \frac{16}{12}$
 $\frac{4}{3} \xrightarrow{\cdot 4} \frac{16}{12}$
Yes

4) $\frac{4}{3}$ and $\frac{8}{6}$ $\frac{2}{2} = 1$
 $\frac{4}{3} \xrightarrow{\cdot 2} \frac{8}{6}$
 $\frac{4}{3} \xrightarrow{\cdot 2} \frac{8}{6}$
Yes

5) $\frac{12}{24}$ and $\frac{3}{4}$ $\frac{4}{6} \neq 1$
 $\frac{12}{24} \xrightarrow{\div 4} \frac{3}{6}$
 $\frac{12}{24} \xrightarrow{\div 6} \frac{2}{4}$
No

6) $\frac{6}{9}$ and $\frac{2}{3}$ $\frac{3}{3} = 1$
 $\frac{6}{9} \xrightarrow{\div 3} \frac{2}{3}$
 $\frac{6}{9} \xrightarrow{\div 3} \frac{2}{3}$
Yes

Solve each proportion.

7) $\frac{10}{k} = \frac{8}{4}$ $40 = 8k$
 $\frac{40}{8} = \frac{8k}{8}$
 $k = 5$

8) $\frac{m}{10} = \frac{10}{3}$ $(\cdot 10) m = 100$
 $\frac{m}{10} = \frac{10}{3}$
 $m = \frac{100}{3}$

9) $\frac{2}{x} = \frac{7}{9}$
 $\frac{18}{7} = \frac{7x}{7}$
 $x = \frac{18}{7}$

10) $\frac{3}{x} = \frac{7}{10}$
 $30 = 7x$
 $x = \frac{30}{7}$

$$11) \frac{4}{9}x = \frac{2}{x}$$

$$\frac{4x}{4} = \frac{18}{4} \div \frac{2}{2}$$

$$x = \frac{9}{2}$$

$$12) \frac{6}{a} = \frac{3}{8}$$

$$\frac{48}{3} = \frac{3a}{3}$$

$$a = 16$$

$$13) \frac{8n}{8} = \frac{8}{3}$$

$$n = \frac{8}{3}$$

$$14) \frac{7}{9}a = \frac{a}{5}$$

$$\frac{35}{9} = \frac{9a}{9}$$

$$a = \frac{35}{9}$$

$$15) \frac{p}{8} = \frac{13}{2}$$

$$p = \frac{104}{2} = 52$$

$$16) \frac{3}{13} = \frac{v}{3}$$

$$\frac{9}{13} = v$$

$$17) \frac{10}{12}n = \frac{2}{n}$$

$$\frac{10n}{10} = \frac{24}{10}$$

$$n = \frac{24}{10} \div \frac{2}{2} = \frac{12}{5}$$

$$18) \frac{11}{10} = \frac{r}{11}$$

$$\frac{121}{10} = r$$

$$19) \frac{x}{9} = \frac{7}{14}$$

$$x = \frac{63}{14} \div \frac{7}{7} = \frac{9}{2}$$

$$20) \frac{a}{19} = \frac{11}{14}$$

$$a = \frac{110}{14} \div \frac{2}{2} = \frac{55}{7}$$

$$21) \frac{v}{12} = \frac{10}{2}$$

$$x = 10 \cdot 6 = 60$$

$$22) \frac{6}{14}n = \frac{5}{n}$$

$$6n = 70$$
$$n = \frac{70}{6} \div \frac{2}{2} = \frac{35}{3}$$