

3:04B | Simplifying Algebraic Fractions

Name: _____ Class: _____

Examples

Simplify.

$$\begin{aligned} 1 \quad & \frac{5a}{7} \times \frac{3a}{10} \\ & = \frac{1^1 5a}{7} \times \frac{3a}{10^2} \\ & = \frac{3a^2}{14} \end{aligned}$$

$$\begin{aligned} 2 \quad & \frac{m}{8} \div \frac{m}{4} \\ & = \frac{1^1 m}{2^3} \times \frac{4^1}{m^1} \\ & = \frac{1}{2} \end{aligned}$$

$$\begin{aligned} 3 \quad & \frac{2x}{5} \times \frac{15y}{8} \\ & = \frac{1^2 x}{1^1 5} \times \frac{3^1 5y}{8^1} \\ & = \frac{3xy}{4} \end{aligned}$$

$$\begin{aligned} 4 \quad & \frac{10d}{9} \div \frac{4d}{15} \\ & = \frac{5^1 10d}{3^2} \times \frac{15^1}{4d^1} \\ & = \frac{25}{6} \text{ or } 4\frac{1}{6} \end{aligned}$$

Exercise

1 Simplify.

a $\frac{1}{3} \times \frac{4}{5}$

e $\frac{2}{7} \div \frac{3}{5}$

i $\frac{3}{8} \div \frac{1}{10}$

b $\frac{5}{9} \times \frac{2}{7}$

f $\frac{8}{9} \div \frac{7}{11}$

j $\frac{4}{15} \times \frac{7}{12}$

c $\frac{7}{8} \div \frac{3}{5}$

g $\frac{8}{15} \div \frac{4}{5}$

k $\frac{9}{10} \div \frac{3}{5}$

d $\frac{7}{12} \times \frac{5}{3}$

h $\frac{7}{12} \times \frac{6}{7}$

l $\frac{5}{6} \times \frac{9}{20}$

2 Simplify.

a $\frac{a}{2} \times \frac{b}{5}$

e $\frac{t}{7} \div \frac{u}{14}$

i $\frac{c}{4} \div \frac{c}{12}$

b $\frac{x}{3} \times \frac{8}{y}$

f $\frac{6}{b} \times \frac{a}{9}$

j $\frac{m}{n} \times \frac{n}{5}$

c $\frac{m}{7} \times \frac{n}{3}$

g $\frac{a}{10} \div \frac{a}{2}$

k $\frac{8}{t} \div \frac{4}{t}$

d $\frac{c}{5} \div \frac{d}{6}$

h $\frac{5}{x} \times \frac{x}{20}$

l $\frac{y}{20} \times \frac{5}{6}$

3 Simplify.

a $\frac{a}{3} \div \frac{a}{8}$

e $\frac{3x}{4} \div \frac{x}{8}$

i $\frac{5}{12h} \times \frac{3h}{20}$

b $\frac{4a}{3} \div \frac{2a}{5}$

f $\frac{9c}{10} \times \frac{5c}{3}$

j $\frac{12k}{5} \div \frac{3k}{10}$

c $\frac{4p}{7} \times \frac{3}{8p}$

g $\frac{m}{8} \div \frac{3m}{8}$

k $\frac{15q}{7} \times \frac{14}{5q}$

d $\frac{3m}{5} \times \frac{10}{m}$

h $\frac{5r}{6} \times \frac{3}{10r}$

l $\frac{20}{9x} \div \frac{10}{3x}$

Fun Spot 3:04B | Did you hear about the dingbat who paid five dollars to have his thoughts read?



Simplify each fraction. Match the letters with the answers.

A $\frac{15}{20}$

B $\frac{10}{15}$

C $\frac{3}{27}$

E $\frac{4}{12}$

G $\frac{10}{20}$

H $\frac{8}{10}$

I $\frac{2}{10}$

K $\frac{5}{30}$

M $\frac{8}{18}$

N $\frac{10}{18}$

O $\frac{6}{42}$

S $\frac{20}{24}$

T $\frac{3}{24}$

Y $\frac{4}{40}$

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$\frac{4}{5}$ $\frac{1}{3}$

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$\frac{1}{2}$ $\frac{1}{7}$ $\frac{1}{8}$

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$\frac{4}{5}$ $\frac{1}{5}$ $\frac{5}{6}$

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$\frac{4}{9}$ $\frac{1}{7}$ $\frac{5}{9}$ $\frac{1}{3}$ $\frac{1}{10}$

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$\frac{2}{3}$ $\frac{3}{4}$ $\frac{1}{9}$ $\frac{1}{6}$

24B Simplifying Algebraic Fractions

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|-------------------|-------------------|--------------------|-------------------|-------------------|--------------------|-----------------|-----------------|
| a $\frac{4}{15}$ | b $\frac{10}{63}$ | c $1\frac{11}{24}$ | d $\frac{35}{36}$ | e $\frac{10}{21}$ | f $1\frac{25}{63}$ | g $\frac{2}{3}$ | h $\frac{1}{2}$ |
| i $3\frac{3}{4}$ | j $\frac{7}{45}$ | k $1\frac{1}{2}$ | l $\frac{3}{8}$ | | | | |
| a $\frac{ab}{10}$ | b $\frac{8x}{5y}$ | c $\frac{mn}{21}$ | d $\frac{6c}{5d}$ | e $\frac{2t}{u}$ | f $\frac{2a}{3b}$ | g $\frac{1}{5}$ | h $\frac{1}{4}$ |
| i 3 | j $\frac{m}{5}$ | k 2 | l $\frac{y}{24}$ | | | | |
| a $\frac{8}{3}$ | b $3\frac{1}{3}$ | c $\frac{3}{14}$ | d 6 | e 6 | f $\frac{3c^2}{2}$ | g $\frac{1}{3}$ | h $\frac{1}{4}$ |
| i $\frac{1}{16}$ | j 8 | k 6 | l $\frac{2}{3}$ | | | | |