



Math worksheet on 'Factoring - Simplifying Fraction Multiplication with Factors - Composite to Factored (Level 2)'. Part of a broader unit on 'Factoring, Multiplication, Division, Fractions - Advanced'

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2 Use factorization to simplify by showing what factors in this fraction multiplication can be cancelled out

$$\frac{2}{18} \times \frac{45}{21} \times \frac{35}{5}$$

a $\frac{2}{2 \times 3 \times 3} \times \frac{3 \times 3 \times 5}{3 \times 7} \times \frac{5 \times 7}{5}$	b $\frac{2}{2 \times 3 \times 3} \times \frac{3 \times 3 \times 5}{11 \times 7} \times \frac{5 \times 13}{5}$
c $\frac{2}{2 \times 3 \times 3} \times \frac{3 \times 3 \times 3 \times 5}{3 \times 7} \times \frac{5 \times 7}{2}$	d $\frac{5}{2 \times 3 \times 3} \times \frac{3 \times 2 \times 5}{3 \times 7} \times \frac{13}{5}$
e $\frac{2}{2 \times 3 \times 3} \times \frac{3 \times 3}{3 \times 7} \times \frac{5 \times 7}{5}$	f $\frac{2}{2 \times 3 \times 3} \times \frac{3 \times 3 \times 5}{3 \times 7} \times \frac{7}{5}$

1 Use factorization to simplify by showing what factors in this fraction multiplication can be cancelled out

$$\frac{6}{42} \times \frac{15}{35} \times \frac{21}{3}$$

a $\frac{2 \times 3}{2 \times 3 \times 7} \times \frac{7 \times 5}{5 \times 7 \times 7} \times \frac{3 \times 7}{3}$	b $\frac{2 \times 3}{2 \times 7} \times \frac{3 \times 5 \times 5}{5 \times 7} \times \frac{3 \times 7 \times 7}{3}$
c $\frac{2 \times 3 \times 3}{2 \times 3 \times 7} \times \frac{3 \times 5}{5 \times 7} \times \frac{7}{3}$	d $\frac{2 \times 3}{2 \times 3 \times 7} \times \frac{3 \times 5}{5 \times 7} \times \frac{3 \times 7}{3}$
e $\frac{2 \times 3}{2 \times 7} \times \frac{5}{7 \times 7} \times \frac{3 \times 7}{3}$	f $\frac{2 \times 2 \times 3}{2 \times 3 \times 7} \times \frac{3 \times 5}{5} \times \frac{3 \times 7}{3 \times 3}$

3 Use factorization to simplify by showing what factors in this fraction multiplication can be cancelled out

$$\frac{8}{14} \times \frac{3}{35} \times \frac{49}{4}$$

a $\frac{2 \times 2}{2 \times 7 \times 7} \times \frac{3 \times 3}{7} \times \frac{7 \times 7}{2 \times 2}$	b $\frac{2 \times 2 \times 2}{2 \times 7} \times \frac{3 \times 3}{13 \times 7} \times \frac{11 \times 7}{2 \times 2}$
c $\frac{3 \times 2}{2} \times \frac{3}{5 \times 7} \times \frac{7 \times 7}{2 \times 2}$	d $\frac{2 \times 2 \times 2}{2 \times 7} \times \frac{3}{5 \times 7} \times \frac{7 \times 7}{2 \times 2}$
e $\frac{2 \times 7}{2 \times 7} \times \frac{3}{5 \times 7} \times \frac{7 \times 7}{2 \times 2}$	f $\frac{2 \times 2 \times 2}{3 \times 7} \times \frac{3}{5 \times 7 \times 7} \times \frac{7}{2 \times 3}$

4 Use factorization to simplify by showing what factors in this fraction multiplication can be cancelled out

$$\frac{7}{35} \times \frac{20}{10} \times \frac{15}{14}$$

a $\frac{7}{5 \times 7} \times \frac{2 \times 2 \times 5}{2 \times 5} \times \frac{3 \times 5}{2 \times 7}$	b $\frac{7}{5 \times 7} \times \frac{2 \times 2 \times 5}{13} \times \frac{3 \times 3 \times 5}{2 \times 2 \times 7 \times 7}$
c $\frac{7}{5 \times 7} \times \frac{2 \times 2 \times 5}{2 \times 5 \times 5} \times \frac{3 \times 5}{2 \times 7}$	d $\frac{7}{7 \times 7} \times \frac{2 \times 2 \times 3}{2 \times 5} \times \frac{3 \times 5 \times 5}{7 \times 7}$
e $\frac{7 \times 7}{5 \times 7 \times 7} \times \frac{2 \times 2 \times 2 \times 5}{2 \times 5} \times \frac{3 \times 5}{2 \times 7}$	

5 Use factorization to simplify by showing what factors in this fraction multiplication can be cancelled out

$$\frac{75}{3} \times \frac{18}{50} \times \frac{1}{15}$$

a $\frac{5 \times 5 \times 5}{3} \times \frac{2 \times 3 \times 3 \times 7}{2 \times 2 \times 5 \times 5} \times \frac{1}{3 \times 2}$	b $\frac{3 \times 5 \times 5}{3} \times \frac{2 \times 5}{2 \times 5} \times \frac{1}{3 \times 5}$
c $\frac{3 \times 5}{3} \times \frac{2 \times 2 \times 7 \times 3}{2 \times 5 \times 5} \times \frac{1}{3 \times 5}$	d $\frac{5 \times 5 \times 5}{3} \times \frac{2 \times 3 \times 3}{2 \times 5 \times 5} \times \frac{1}{3 \times 5}$
e $\frac{5 \times 5 \times 11}{3} \times \frac{2 \times 3 \times 3}{2 \times 5 \times 5} \times \frac{1}{11 \times 5}$	

6 Use factorization to simplify by showing what factors in this fraction multiplication can be cancelled out

$$\frac{12}{28} \times \frac{1}{6} \times \frac{98}{2}$$

a $\frac{2 \times 2 \times 3}{2 \times 2 \times 7} \times \frac{1}{2 \times 3} \times \frac{2 \times 7 \times 7}{2}$	b $\frac{2 \times 13 \times 3 \times 3}{5 \times 2 \times 7} \times \frac{1}{3} \times \frac{2 \times 7}{2}$
c $\frac{5 \times 2 \times 3}{2 \times 2 \times 2 \times 7} \times \frac{1}{2 \times 3} \times \frac{2 \times 5 \times 7 \times 7}{2}$	d $\frac{13 \times 2 \times 3}{2 \times 2 \times 2 \times 7} \times \frac{1}{2} \times \frac{2 \times 7 \times 7}{2}$
e $\frac{2 \times 2 \times 3}{2 \times 2} \times \frac{1}{2 \times 3} \times \frac{2 \times 7 \times 7}{2}$	f $\frac{2 \times 5 \times 5}{2 \times 7} \times \frac{13}{7} \times \frac{2 \times 7 \times 7}{2}$

7 Use factorization to simplify by showing what factors in this fraction multiplication can be cancelled out

$$\frac{4}{15} \times \frac{21}{12} \times \frac{25}{7}$$

a $\frac{2 \times 2}{3 \times 3 \times 5 \times 5} \times \frac{7}{2} \times \frac{5}{7}$	b $\frac{2 \times 2}{3 \times 2} \times \frac{11}{2 \times 2 \times 3} \times \frac{5 \times 5}{7}$
c $\frac{2 \times 2}{3 \times 5} \times \frac{3 \times 7}{2 \times 2 \times 3} \times \frac{5 \times 5}{7}$	d $\frac{2}{3 \times 5} \times \frac{3 \times 7}{13 \times 2 \times 3} \times \frac{5 \times 5 \times 5}{7 \times 7}$
e $\frac{2}{3 \times 5} \times \frac{3 \times 7}{2 \times 2 \times 2 \times 3} \times \frac{5 \times 5}{7}$	f $\frac{2}{3 \times 5} \times \frac{3 \times 7}{2 \times 3} \times \frac{5 \times 5}{7}$