National 5: Dividing Fractions

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Study this example

$2\frac{1}{10} \div 1\frac{13}{15}$ ← First, we must always convert any mixed numbers into improper fractions.

$= \frac{21}{10} \div \frac{28}{15}$ ← Remember: it's the whole number times the denominator plus the numerator.

$= \frac{21}{10} \times \frac{15}{28}$ ← To divide, we multiply by the reciprocal (upside-down) of the 2nd fraction.

$= \frac{3}{2} \times \frac{3}{4}$ ← Always simplify *before* multiplying. In this example, $\frac{21}{28} = \frac{3}{4}$ and $\frac{15}{10} = \frac{3}{2}$.

$= \frac{9}{8}$ ← Multiply the numerators and denominators separately.

$= 1\frac{1}{8}$ ← If your answer is improper, convert it to a mixed number.

Q1 Simple questions with no mixed numbers. Remember to simplify before multiplying, if possible.

a) $\frac{1}{4} \div \frac{1}{2}$ **b)** $\frac{1}{2} \div \frac{2}{3}$ **c)** $\frac{1}{4} \div \frac{2}{5}$

d) $\frac{3}{5} \div \frac{2}{3}$ **e)** $\frac{1}{6} \div \frac{2}{3}$ **f)** $\frac{2}{3} \div \frac{5}{6}$

Q2 These questions have one mixed number to convert to an improper fraction.

a) $\frac{2}{5} \div 1\frac{1}{3}$ **b)** $1\frac{1}{2} \div \frac{3}{5}$ **c)** $\frac{3}{4} \div 2\frac{1}{2}$

d) $1\frac{3}{4} \div \frac{7}{8}$ **e)** $\frac{4}{5} \div 1\frac{3}{10}$ **f)** $3\frac{1}{2} \div \frac{4}{5}$

Q3 These questions involve mixed numbers. They need quite a lot of simplifying before multiplying.

a) $4\frac{2}{3} \div 2\frac{11}{12}$ **b)** $1\frac{7}{25} \div 2\frac{2}{5}$ **c)** $4\frac{2}{3} \div 1\frac{1}{27}$

d) $1\frac{3}{10} \div 5\frac{1}{5}$ **e)** $1\frac{7}{8} \div 1\frac{11}{24}$ **f)** $13\frac{1}{3} \div 2\frac{2}{9}$

Q4 These questions involve a whole number. Write it over 1 and use the same method as above.

a) $4 \div \frac{8}{9}$ **b)** $3\frac{1}{4} \div 3$ **c)** $9 \div 3\frac{6}{7}$

Q5 Various question types.

a) $2\frac{4}{9} \div 2\frac{3}{4}$ **b)** $4 \div 2\frac{3}{5}$ **c)** $5\frac{1}{6} \div \frac{7}{9}$

d) $\frac{8}{11} \div \frac{4}{33}$ **e)** $1\frac{13}{14} \div 7\frac{5}{7}$ **f)** $5\frac{3}{4} \div 3\frac{2}{7}$