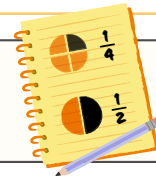


Dividing Fractions

ANSWERS



Section A Reciprocals

1) Show that $\frac{3}{4} \times \frac{4}{3} = 1$

$$\frac{3}{4} \times \frac{4}{3} = \frac{12}{12} = 1$$

2) Fill in the blanks:

a) $\frac{2}{3} \times \boxed{\frac{3}{2}} = 1$

c) $1 = \frac{1}{2} \times \boxed{2}$

b) $\boxed{\frac{7}{5}} \times \frac{5}{7} = 1$

d) $\boxed{\frac{1}{8}} \times 8 = 1$

Any number multiplied by its reciprocal is equal to 1.

3) Find the reciprocal of each of the following numbers:

a) $\frac{6}{11}$ $\boxed{\frac{11}{6}}$

c) 5 $\boxed{\frac{1}{5}}$

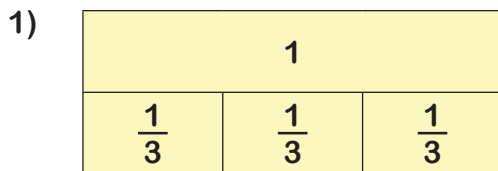
e) $\frac{8}{19}$ $\boxed{\frac{19}{8}}$

b) $-\frac{2}{3}$ $\boxed{-\frac{3}{2}}$

d) $\frac{1}{2}$ $\boxed{2}$

f) $4\frac{2}{3}$ $\boxed{\frac{3}{14}}$

Section B Dividing integers by fractions



Explain how this diagram shows that $1 \div \frac{1}{3} = 3$.

$1 \div \frac{1}{3}$ means how many $\frac{1}{3}$'s are in 1.

The diagram shows that there are 3 lots of $\frac{1}{3}$ in 1.

2) Calculate the following:

a) $2 \div \frac{1}{3} = \boxed{6}$

c) $10 \div \frac{2}{3} = \boxed{30}$

e) $10 \div \frac{3}{5} = \boxed{16\frac{2}{3}}$

b) $2 \div \frac{2}{3} = \boxed{3}$

d) $10 \div \frac{2}{5} = \boxed{25}$

f) $21 \div 2\frac{1}{3} = \boxed{9}$

Section C Dividing any pair of fractions

1) Calculate:

a) $\frac{1}{3} \div \frac{1}{3} = \boxed{\frac{3}{2}}$

d) $\frac{5}{7} \div \frac{5}{12} = \boxed{1\frac{5}{7}}$

g) $\frac{9}{11} \div \frac{9}{11} = \boxed{1}$

b) $\frac{2}{3} \div \frac{1}{2} = \boxed{\frac{4}{3}}$

e) $-\frac{5}{12} \div \frac{4}{9} = \boxed{-\frac{15}{16}}$

h) $\frac{7}{12} \div \frac{3}{4} \div \frac{1}{2} = \boxed{1\frac{5}{9}}$

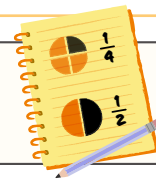
c) $4\frac{2}{3} \div \frac{1}{2} = \boxed{9\frac{1}{3}}$

f) $2\frac{1}{8} \div \frac{9}{10} = \boxed{2\frac{13}{36}}$

i) $3\frac{1}{7} \div 5\frac{1}{2} = \boxed{\frac{4}{7}}$

Dividing Fractions

ANSWERS



Section D Spot and explain the mistake:

$$\begin{aligned} 1) \quad \frac{6}{20} \div \frac{4}{3} &= \frac{20}{6} \times \frac{4}{3} \\ &= \frac{80}{18} \\ &= 4\frac{4}{9} \end{aligned}$$

The reciprocal of both fractions has been multiplied.

The correct calculation is $\frac{6}{20} \times \frac{3}{4}$.

$$\begin{aligned} 2) \quad \frac{3}{8} \div 4 &= \frac{3}{8} \times \frac{4}{1} \\ &= \frac{12}{8} \\ &= 1\frac{1}{2} \end{aligned}$$

The reciprocal of 4 is $\frac{1}{4}$ so dividing by 4 is the same as multiplying by $\frac{1}{4}$.

The correct calculation is $\frac{3}{8} \times \frac{1}{4} = \frac{3}{32}$.

Section E Simplify the following:

$$a) \quad \frac{a}{b} \div \frac{c}{d} = \frac{ad}{bc}$$

$$d) \quad a \div \frac{b}{c} = \frac{ac}{b}$$

$$g) \quad \frac{2a}{b} \div \frac{2a^2}{7b} = \frac{7}{a}$$

$$b) \quad \frac{a}{b} \div \frac{a}{c} = \frac{c}{b}$$

$$e) \quad \frac{a}{b} \div c = \frac{a}{bc}$$

$$h) \quad \frac{a}{2} \div \frac{a}{2} = 1$$

$$c) \quad \frac{a}{7} \div \frac{2}{a} = \frac{a^2}{14}$$

$$f) \quad \frac{2a}{b} \div \frac{c}{7b} = \frac{14a}{c}$$

$$i) \quad \frac{(x+1)}{7} \div \frac{(x+2)}{3} = \frac{3(x+1)}{7(x+2)}$$

Section F Complete each puzzle below:

1) Use each of the following numbers to make the calculations correct.

1	2	2	3	3	5
5	7	9	10	18	35

There are multiple solutions to these, ask your partner to check yours. Discuss with them how you could change your answers and still be correct.

2) Fill the gaps in the multiplication grid.

\times	$\frac{1}{2}$	$\frac{1}{6}$	$\frac{8}{15}$
8	4	$\frac{4}{3}$	$4\frac{4}{15}$
6	3	1	$3\frac{1}{5}$
5	$2\frac{1}{2}$	$\frac{5}{6}$	$2\frac{2}{3}$