Dividing Fractions
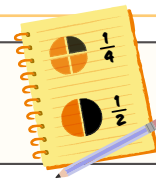
Section A   *Reciprocals*

1) Prove that $\dfrac{3}{4} \times \dfrac{4}{3} = 1$

2) Fill in the blanks:

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

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

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

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

Any number multiplied by its _____ is equal to 1.

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

a) $\dfrac{6}{11}$ $\boxed{}$
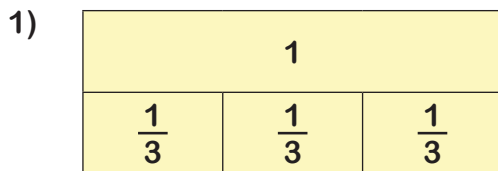
c) 5 $\boxed{}$

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

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

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

f) $4\dfrac{2}{3}$ $\boxed{}$

Section B   *Dividing integers by fractions*

1)

1		
$\dfrac{1}{3}$	$\dfrac{1}{3}$	$\dfrac{1}{3}$

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

_____

_____

2) Calculate the following:

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

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

e) $10 \div \dfrac{3}{5} = \boxed{}$

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

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

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

Section C   *Dividing any pair of fractions*

1) Calculate:

a) $\dfrac{1}{3} \div \dfrac{1}{3} = \boxed{}$

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

g) $\dfrac{9}{11} \div \dfrac{9}{11} = \boxed{}$

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

e) $-\dfrac{5}{12} \div \dfrac{4}{9} = \boxed{}$

h) $\dfrac{7}{12} \div \dfrac{3}{4} \div \dfrac{1}{2} = \boxed{}$

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

f) $2\dfrac{1}{8} \div \dfrac{9}{10} = \boxed{}$

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

Dividing Fractions
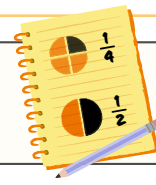
Section D   *Identify and explain the mistake:*

1) $\dfrac{6}{20} \div \dfrac{4}{3} = \dfrac{20}{6} \times \dfrac{4}{3}$

$\qquad = \dfrac{80}{18}$

$\qquad = 4\dfrac{4}{9}$

2) $\dfrac{3}{8} \div 4 = \dfrac{3}{8} \times \dfrac{4}{1}$

$\qquad = \dfrac{12}{8}$

$\qquad = 1\dfrac{1}{2}$

Section E   *Simplify the following:*

a) $\dfrac{a}{b} \div \dfrac{c}{d}$	d) $a \div \dfrac{b}{c}$	g) $\dfrac{2a}{b} \div \dfrac{2a^2}{7b}$
b) $\dfrac{a}{b} \div \dfrac{a}{c}$	e) $\dfrac{a}{b} \div c$	h) $\dfrac{a}{2} \div \dfrac{a}{2}$
c) $\dfrac{a}{7} \div \dfrac{2}{a}$	f) $\dfrac{2a}{b} \div \dfrac{c}{7b}$	i) $\dfrac{(x+1)}{7} \div \dfrac{(x+2)}{3}$

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

$\dfrac{\square}{\square} \div \dfrac{\square}{\square} = \dfrac{\square}{\square}$ $\qquad$ $\dfrac{\square}{\square} \div \dfrac{\square}{\square} = \dfrac{\square}{\square}$

2)   **Fill the gaps in the multiplication grid.**

×	$\dfrac{1}{2}$		
	4		
6		1	
	$2\dfrac{1}{2}$		$2\dfrac{2}{3}$