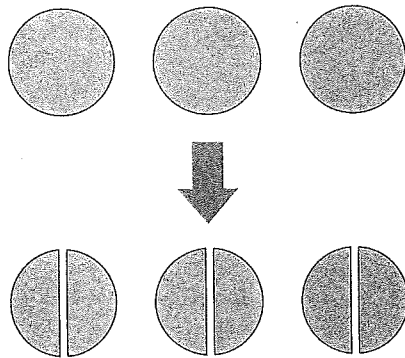


# 1 Fractions

## 1 Division

Azizah bought 3 oranges. She cut each orange into halves. How many pieces of orange did she have?



There are 2 halves in 1 whole.  
There are 6 halves in 3 wholes.



$$3 \div \frac{1}{2} = 6$$

She had 6 pieces of orange.

$$\begin{aligned} 3 \div \frac{1}{2} &= 3 \times 2 \\ &= 6 \end{aligned}$$

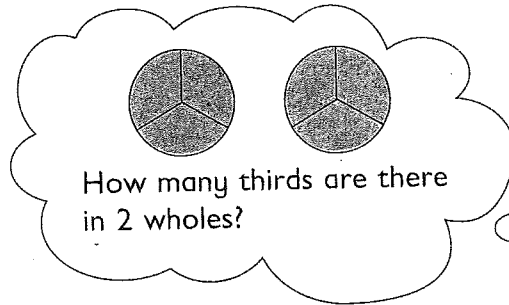
Dividing by  $\frac{1}{2}$  is the  
same as multiplying by 2.



1. Divide 2 by  $\frac{1}{3}$ .

$$2 \div \frac{1}{3} = 2 \times 3$$

$$= \blacksquare$$



2. Divide.

(a)  $1 \div \frac{1}{4} = 1 \times \blacksquare$

$$= \blacksquare$$

(b)  $2 \div \frac{1}{5} = 2 \times \blacksquare$

$$= \blacksquare$$

3. Divide.

(a)  $4 \div \frac{1}{2}$

(b)  $6 \div \frac{1}{6}$

(c)  $3 \div \frac{1}{7}$

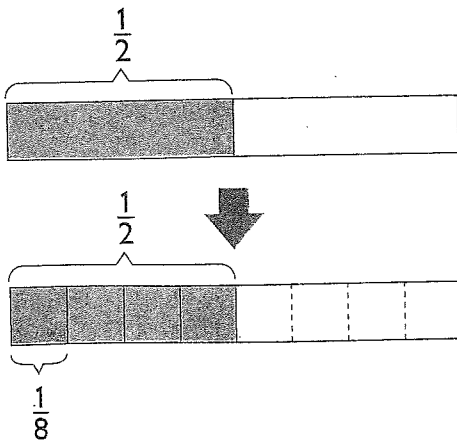
(d)  $8 \div \frac{1}{4}$

(e)  $5 \div \frac{1}{3}$

(f)  $9 \div \frac{1}{9}$

Workbook Exercise 1

4. Divide  $\frac{1}{2}$  by 4.



Divide  $\frac{1}{2}$  into 4 equal parts.

Each part is  $\frac{1}{8}$ .



$$\frac{1}{2} \div 4 = \frac{1}{2} \times \frac{1}{4}$$

$$= \blacksquare$$

Dividing by 4 is the same as multiplying by  $\frac{1}{4}$ .

5. Divide.

$$(a) \frac{1}{3} \div 2 = \frac{1}{3} \times \blacksquare \\ = \blacksquare$$

$$(b) \frac{4}{5} \div 8 = \frac{4}{5} \times \blacksquare \\ = \blacksquare$$

6. Divide.

$$(a) \frac{1}{2} \div 3$$

$$(b) \frac{1}{4} \div 6$$

$$(c) \frac{1}{6} \div 5$$

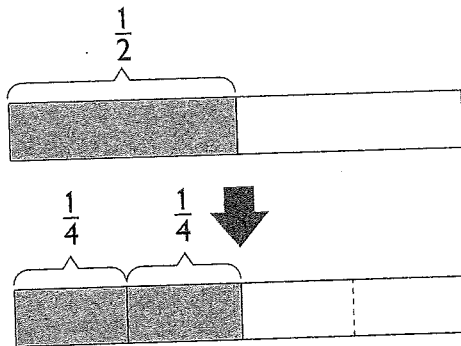
$$(d) \frac{2}{3} \div 3$$

$$(e) \frac{2}{7} \div 2$$

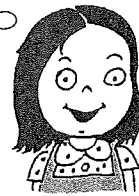
$$(f) \frac{4}{9} \div 8$$

Workbook Exercise 2

7. Divide  $\frac{1}{2}$  by  $\frac{1}{4}$ .



Divide  $\frac{1}{2}$  into quarters.  
There are 2 quarters.



$$\frac{1}{2} \div \frac{1}{4} = \frac{1}{2} \times 4 \\ = \blacksquare$$

Dividing by  $\frac{1}{4}$  is the same as multiplying by 4.

8. Divide.

$$(a) \frac{2}{3} \div \frac{1}{3} = \frac{2}{3} \times \blacksquare \\ = \blacksquare$$

$$(b) \frac{2}{3} \div \frac{1}{6} = \frac{2}{3} \times \blacksquare \\ = \blacksquare$$

9. Divide.

$$(a) \frac{1}{4} \div \frac{1}{2}$$

$$(b) \frac{2}{5} \div \frac{1}{10}$$

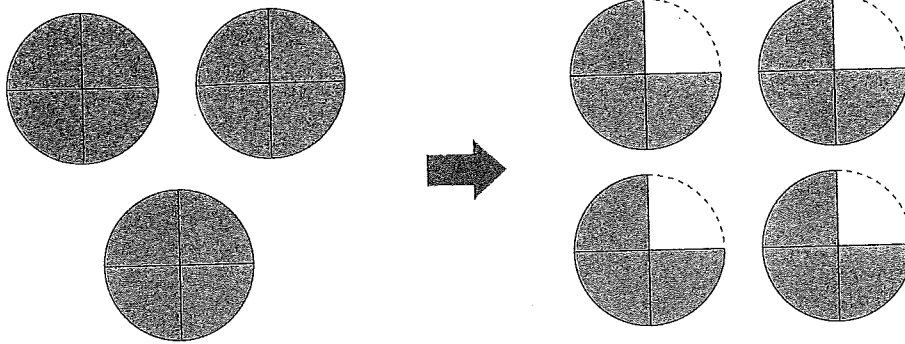
$$(c) \frac{3}{4} \div \frac{1}{8}$$

$$(d) \frac{5}{6} \div \frac{1}{6}$$

$$(e) \frac{2}{9} \div \frac{1}{3}$$

$$(f) \frac{3}{8} \div \frac{1}{4}$$

10. Divide 3 by  $\frac{3}{4}$ .



$$3 \div \frac{3}{4} = 3 \times \frac{4}{3}$$

$$= \blacksquare$$

How many  $\frac{3}{4}$ 's can be made from 3 wholes?



Dividing by  $\frac{3}{4}$  is the same as multiplying by  $\frac{4}{3}$ .

11. Divide.

(a)  $1 \div \frac{3}{8} = 1 \times \blacksquare$   
 $= \blacksquare$

(b)  $2 \div \frac{4}{5} = 2 \times \blacksquare$   
 $= \blacksquare$

(c)  $\frac{1}{3} \div \frac{2}{9} = \frac{1}{3} \times \blacksquare$   
 $= \blacksquare$

(d)  $\frac{5}{6} \div \frac{2}{3} = \frac{5}{6} \times \blacksquare$   
 $= \blacksquare$

12. Divide.

(a)  $3 \div \frac{2}{3}$

(b)  $6 \div \frac{3}{5}$

(c)  $4 \div \frac{6}{7}$

(d)  $\frac{2}{3} \div \frac{3}{5}$

(e)  $\frac{3}{5} \div \frac{9}{10}$

(f)  $\frac{5}{8} \div \frac{2}{5}$

## PRACTICE 1A

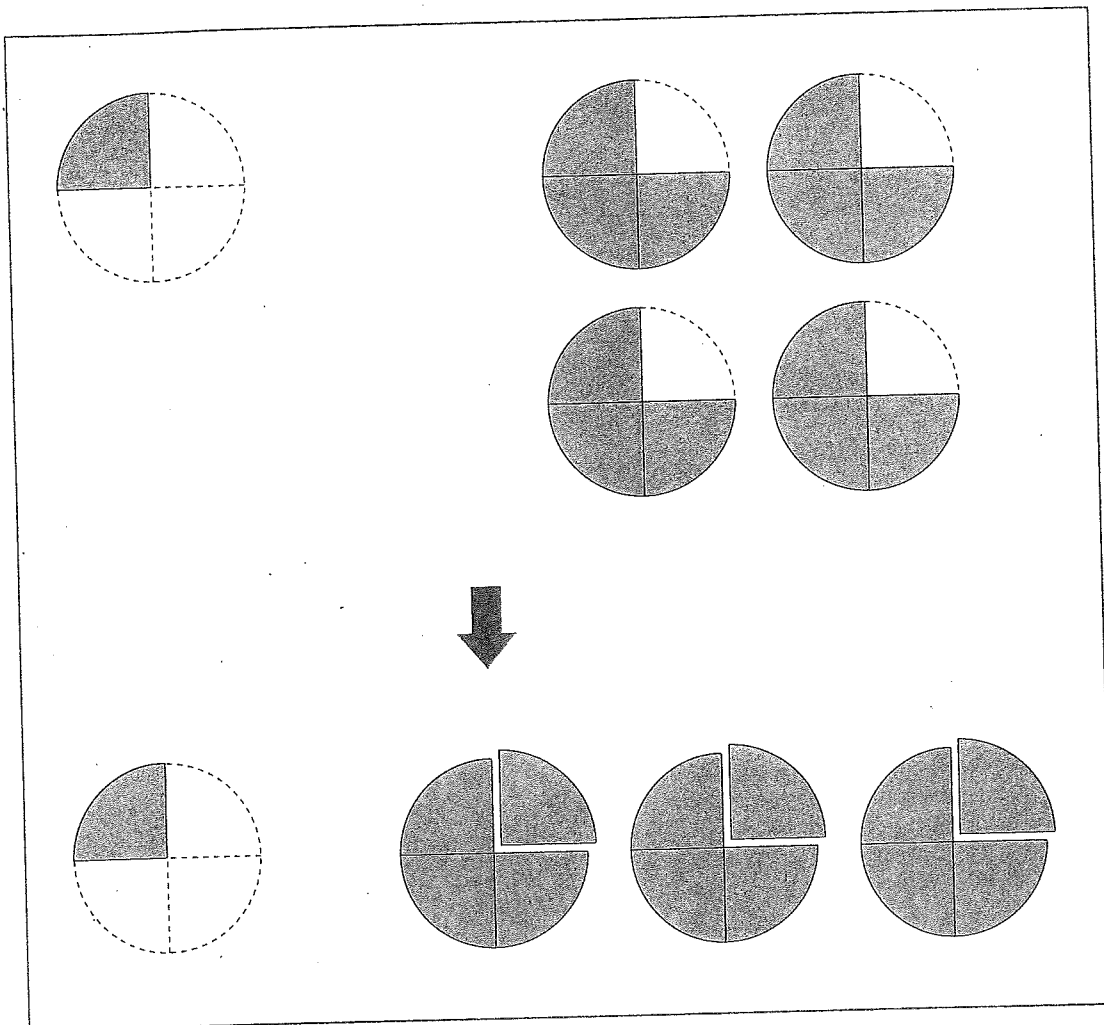
Find the value of each of the following in its simplest form.

- |    | (a)                            | (b)                             | (c)                            |
|----|--------------------------------|---------------------------------|--------------------------------|
| 1. | $3 \div \frac{1}{2}$           | $5 \div \frac{1}{4}$            | $6 \div \frac{2}{3}$           |
| 2. | $\frac{1}{5} \div 2$           | $\frac{1}{2} \div 6$            | $\frac{2}{7} \div 4$           |
| 3. | $\frac{1}{4} \div \frac{1}{2}$ | $\frac{8}{9} \div \frac{1}{3}$  | $\frac{3}{4} \div \frac{1}{6}$ |
| 4. | $\frac{1}{6} \div \frac{2}{3}$ | $\frac{3}{4} \div \frac{9}{10}$ | $\frac{4}{5} \div \frac{5}{8}$ |

5. (a) How many  $\frac{1}{6}$ 's are there in 3?  
(b) How many  $\frac{1}{6}$ 's are there in  $\frac{2}{3}$ ?
6. How many  $\frac{1}{2}$ -hour periods will make up 4 hours?
7. How many bricks weighing  $\frac{1}{4}$  lb each will have a total weight of 3 lb?
8. How many pieces of string, each  $\frac{1}{5}$  m long, can be cut from a string 3 m long?
9. Nicole used 6 m of string to tie some packages. She used  $\frac{2}{3}$  m of string for each package. How many packages did she tie?
10. Holly had 2 kg of beef. She used  $\frac{4}{5}$  of it to make stew. How many kilograms of beef did she have left?
11. Kimberly cuts 6 pieces of tape, each  $\frac{4}{5}$  m long, from a roll of tape 5 m long. How many meters of tape are left in the roll?

## 2 Order of Operations

Find the value of  $\frac{1}{4} + \frac{3}{4} \times 4$ .



$$\frac{1}{4} + \frac{3}{4} \times 4$$

$$= \frac{1}{4} + \blacksquare$$

$$= \blacksquare$$

Do multiplication first.



1. Find the value of  $\frac{3}{4} - \frac{1}{2} + \frac{1}{3}$ .

$$\begin{aligned}\frac{3}{4} - \frac{1}{2} + \frac{1}{3} &= \frac{9}{12} - \frac{6}{12} + \frac{4}{12} \\ &= \frac{\blacksquare}{12}\end{aligned}$$

12 is a common multiple  
of 4, 2 and 3.



2. Find the value of

(a)  $\frac{1}{3} + \frac{3}{4} + \frac{1}{2}$

(c)  $\frac{1}{5} + \frac{7}{10} - \frac{3}{4}$

(e)  $\frac{1}{2} - \frac{2}{5} + \frac{3}{10}$

(b)  $\frac{1}{3} + \frac{5}{6} - \frac{3}{4}$

(d)  $\frac{8}{9} - \frac{1}{6} - \frac{1}{2}$

(f)  $\frac{5}{8} - \frac{1}{2} + \frac{3}{4}$

3. Find the value of  $\frac{7}{9} \times 5 \times \frac{3}{8}$ .

$$\begin{aligned}\frac{7}{9} \times 5 \times \frac{3}{8} &= \frac{7 \times 5}{3 \times 8} \\ &= \blacksquare\end{aligned}$$

4. Find the value of  $\frac{2}{5} \times \frac{3}{4} \div \frac{1}{2}$ .

$$\begin{aligned}\frac{2}{5} \times \frac{3}{4} \div \frac{1}{2} &= \frac{2}{5} \times \frac{3}{4} \times 2 \\ &= \blacksquare\end{aligned}$$

5. Find the value of  $\frac{9}{10} \div \frac{3}{5} \times \frac{2}{3}$ .

$$\begin{aligned}\frac{9}{10} \div \frac{3}{5} \times \frac{2}{3} &= \frac{9}{10} \times \frac{5}{3} \times \frac{2}{3} \\ &= \blacksquare\end{aligned}$$

6. Find the value of  $\frac{5}{6} \div \frac{1}{2} \div 4$ .

$$\begin{aligned}\frac{5}{6} \div \frac{1}{2} \div 4 &= \frac{5}{6} \times 2 \times \frac{1}{4} \\ &= \blacksquare\end{aligned}$$

7. Find the value of

(a)  $3 \times \frac{1}{2} \times \frac{5}{6}$

(c)  $\frac{4}{9} \div 4 \div \frac{3}{5}$

(e)  $14 \div 2 \times \frac{2}{7}$

(b)  $\frac{1}{3} \times \frac{3}{4} \times 8$

(d)  $\frac{3}{8} \div \frac{1}{2} \div 3$

(f)  $\frac{3}{5} \times \frac{4}{9} \div \frac{3}{10}$

Workbook Exercise 4

8. Find the value of  $4 + 6 \times \frac{5}{8}$ .

$$4 + 6 \times \frac{5}{8} = 4 + \blacksquare$$

$$= \blacksquare$$

**Do multiplication or division from left to right, then addition or subtraction from left to right.**

9. Find the value of  $1 - \frac{4}{5} \div 6$ .

$$1 - \frac{4}{5} \div 6 = 1 - \blacksquare$$

$$= \blacksquare$$

10. Find the value of

(a)  $3 - \frac{1}{3} \div 4$

(c)  $4 \div \frac{2}{5} + 5 \div \frac{5}{8}$

(e)  $2 \times 3 \div 9 + \frac{1}{2}$

(b)  $7 + 5 \times \frac{9}{10}$

(d)  $8 \times 4 - 6 \div \frac{2}{3}$

(f)  $4 \div 6 \times 6 + \frac{2}{5}$

11. Find the value of  $\frac{3}{8} - \frac{3}{4} \times \frac{1}{3}$ .

$$\begin{aligned} \frac{3}{8} - \frac{3}{4} \times \frac{1}{3} &= \frac{3}{8} - \blacksquare \\ &= \blacksquare \end{aligned}$$

12. Find the value of  $\frac{5}{6} + \frac{2}{3} \div 4 \times \frac{1}{2}$ .

$$\begin{aligned} \frac{5}{6} + \frac{2}{3} \div 4 \times \frac{1}{2} &= \frac{5}{6} + \blacksquare \\ &= \blacksquare \end{aligned}$$

13. Find the value of

(a)  $\frac{3}{4} + \frac{2}{5} \times \frac{1}{4}$

(c)  $\frac{1}{8} + \frac{1}{2} \div \frac{1}{4}$

(e)  $\frac{2}{3} + \frac{5}{6} \div 10 \times \frac{2}{3}$

(b)  $\frac{3}{5} - \frac{3}{4} \times \frac{2}{9}$

(d)  $\frac{7}{9} - \frac{1}{5} \div \frac{3}{10}$

(f)  $\frac{5}{8} - \frac{5}{8} \times \frac{4}{5} \div 2$

Workbook Exercise 5

14. Find the value of  $(\frac{4}{5} - \frac{1}{2}) \div 4$ .

$$\begin{aligned} (\frac{4}{5} - \frac{1}{2}) \div 4 &= \blacksquare \div 4 \\ &= \blacksquare \end{aligned}$$

Do what is in the parenthesis first.



15. Find the value of

(a)  $(\frac{3}{5} + \frac{1}{3}) \div \frac{2}{5}$

(c)  $\frac{4}{7} \times (\frac{3}{4} + \frac{1}{8})$

(e)  $\frac{2}{3} \times (\frac{1}{2} + \frac{1}{4}) - \frac{3}{8}$

(b)  $\frac{3}{4} \div (\frac{3}{4} - \frac{1}{2})$

(d)  $(\frac{1}{3} + \frac{5}{12}) \times \frac{4}{9}$

(f)  $\frac{2}{5} + (\frac{1}{3} + \frac{1}{2}) \div \frac{3}{4}$

Workbook Exercise 6

## PRACTICE 1B

Find the value of each of the following in its simplest form.

1. (a)  $\frac{2}{3} + \frac{1}{4} - \frac{1}{2}$

(c)  $2 \times \frac{4}{9} \div \frac{2}{3}$

(e)  $\frac{3}{4} \times \frac{2}{3} \div \frac{1}{2}$

(b)  $\frac{7}{8} - \frac{1}{4} + \frac{1}{2}$

(d)  $\frac{3}{5} \div 6 \times \frac{5}{6}$

(f)  $\frac{5}{6} \div \frac{3}{4} \div \frac{5}{9}$

2. (a)  $6 + 4 \times \frac{3}{4}$

(c)  $3 + 6 \div \frac{2}{7}$

(e)  $2 + \frac{8}{9} \div \frac{2}{3}$

(b)  $\frac{3}{4} \times 8 - 6 \times \frac{2}{3}$

(d)  $\frac{5}{6} \div 10 + 2$

(f)  $7 - \frac{9}{10} \div \frac{3}{5}$

3. (a)  $6 \times (1 - \frac{3}{4})$

(c)  $\frac{2}{5} \times (\frac{3}{4} - \frac{3}{8})$

(e)  $\frac{4}{9} \div (2 \div \frac{3}{4})$

(b)  $(\frac{3}{4} - \frac{1}{2}) \div 3$

(d)  $(\frac{1}{4} + \frac{3}{8}) \div \frac{5}{6}$

(f)  $\frac{1}{7} \div (\frac{1}{3} \times \frac{6}{7})$

4. (a)  $(20 - 8) \times \frac{3}{4} \div 3$

(c)  $(20 + 12) \div 12 \times \frac{3}{8}$

(e)  $\frac{3}{8} \times (\frac{5}{6} - \frac{1}{2}) \times \frac{2}{5}$

(b)  $(8 + 4) \div \frac{1}{2} \times \frac{5}{6}$

(d)  $(12 + 4) \div \frac{4}{5} \div 8$

(f)  $\frac{2}{3} \div \frac{4}{9} \div (\frac{1}{2} - \frac{3}{8})$

5. (a)  $8 - 6 \times \frac{2}{3} \div 2$

(c)  $\frac{2}{5} \times (18 - 3) + \frac{3}{10}$

(e)  $(\frac{5}{6} - \frac{3}{4}) \div \frac{2}{3} + \frac{3}{4}$

(b)  $16 - 4 \times 2 + 4 \div \frac{1}{2}$

(d)  $\frac{4}{5} - (\frac{3}{4} - \frac{2}{3}) \times 2$

(f)  $\frac{5}{9} \div \frac{5}{6} - \frac{4}{5} \times \frac{3}{4}$