

# Numeracy and Mathematics

**Number, Money  
and Measure**

**Fractions,  
Decimal  
Fractions and  
Percentages**

## **Experiences and Outcomes**

I have investigated the everyday contexts in which simple fractions, percentages or decimal fractions are used and can carry out the necessary calculations to solve related problems. **MNU 2-07a**

I can show the equivalent forms of simple fractions, decimal fractions and percentages, and can choose my preferred form when solving a problem, explaining my choice of method. **MNU 2-07b**

I have investigated how a set of equivalent fractions can be created, understanding the meaning of simplest form, and can apply my knowledge to compare and order the most commonly used fractions. **MTH 2-07c**

## **Benchmarks**

Uses knowledge of equivalent forms of common fractions, decimal fractions and percentages, for example,  $\frac{3}{4} = 0.75 = 75\%$ , to solve problems.

Calculates simple percentages of a quantity and uses this knowledge to solve problems in everyday contexts, for example, calculates the sale price of an item with a discount of 15%.

Calculates simple fractions of a quantity and uses this knowledge to solve problems, for example, find  $\frac{3}{5}$  of 60.

Creates equivalent fractions and uses this knowledge to put a set of most commonly used fractions in order.

Expresses fractions in their simplest form.

Name: Date: 

58

total marks

**Numeracy and Mathematics**

## Number, Money and Measure | Fractions, Decimal Fractions and Percentages

1. Find:

a)  $\frac{3}{4}$  of 36 =

d)  $\frac{7}{9}$  of 81 =

b)  $\frac{2}{3}$  of 15 =

e)  $\frac{1}{2}$  of 54 =

c)  $\frac{2}{9}$  of 90 =

f)  $\frac{4}{5}$  of 75 =

6 marks

2. Write down an equivalent fraction for each of the fractions below:

a)  $\frac{3}{5}$  =

d)  $\frac{3}{10}$  =

b)  $\frac{2}{9}$  =

e)  $\frac{3}{6}$  =

c)  $\frac{1}{3}$  =

f)  $\frac{2}{7}$  =

6 marks

3. Write these fractions as a decimal:

a)  $\frac{2}{10}$  =

d)  $\frac{9}{10}$  =

b)  $\frac{4}{10}$  =

e)  $\frac{27}{100}$  =

c)  $\frac{7}{10}$  =

f)  $\frac{85}{100}$  =

6 marks

4. Write these fractions in their simplest form:

a)  $\frac{4}{16}$  =

d)  $\frac{12}{24}$  =

b)  $\frac{21}{49}$  =

e)  $\frac{16}{48}$  =

c)  $\frac{18}{81}$  =

f)  $\frac{5}{25}$  =

6 marks

total for this page

5. Write these percentages as fractions (in their simplest form):

a) 30%

d) 25%

b) 10%

e) 85%

c) 50%

f) 5%

6 marks

6. Write a fraction, a decimal fraction and a percentage that are equivalent to these fractions:

Question	fraction	decimal	percentage
a) $\frac{1}{4}$			
b) $\frac{1}{2}$			
c) $\frac{3}{4}$			
d) $\frac{1}{5}$			
e) $\frac{1}{10}$			

5 marks

7. Put these in order, starting with the smallest:

$$\frac{1}{2} \quad \frac{1}{4} \quad \frac{2}{10} \quad \frac{3}{5} \quad \frac{1}{8} \quad \frac{1}{3}$$

--	--	--	--	--	--

1 mark

8. Find:

a) 10% of 40 =

d) 70% of 200 =

b) 20% of 100 =

e) 90% of 800 =

c) 50% of 600 =

c) 75% of 500 =

6 marks

total for this page

9. a) At Harry's birthday party there were 40 guests. 55% of the guests were boys. How many guests were girls?

3 marks

- b)  $\frac{6}{8}$  of Harry's birthday cake was eaten. What fraction was left?

- c) Write the fraction of cake left over as a decimal fraction.

10. 150 people were waiting at Aberdeen Railway Station.  $\frac{4}{10}$  were waiting for a train to Inverness.  $\frac{3}{10}$  were waiting for a train to Dundee. The rest were waiting for the train to Glasgow.

5 marks

- a) How many passengers were going to Inverness?

- b) How many passengers were going to Dundee?

- c) How many passengers were going to Glasgow?

- d) What percentage of passengers were not going to Inverness?

- e) Of the passengers travelling to Inverness, 15 had a railcard. What decimal fraction carried railcards?

11. At the supermarket, after Easter, all chocolate eggs were discounted by 60%.

- a) If an egg cost £4.50, what is its new price?

2 marks

total for this page



1	a) 27                      d) 63 b) 10                      e) 27 c) 18                      f) 60	6 marks	6	Write a fraction, a decimal fraction and a percentage that are equivalent to these fractions:	5 marks																									
2 Write down an equivalent fraction for each of the fractions below:  (Answers will vary, suggested answers below)  a) $\frac{6}{10}$ d) $\frac{6}{20}$  b) $\frac{4}{18}$ e) $\frac{1}{2}$  c) $\frac{3}{9}$ f) $\frac{4}{14}$			6 marks	<table border="1"> <thead> <tr> <th>Question</th> <th>fraction</th> <th>decimal</th> <th>percentage</th> </tr> </thead> <tbody> <tr> <td>a) <math>\frac{1}{4}</math></td> <td><math>\frac{2}{8}</math> or equivalent</td> <td>0.25</td> <td>25%</td> </tr> <tr> <td>b) <math>\frac{1}{2}</math></td> <td><math>\frac{2}{4}</math> or equivalent</td> <td>0.5</td> <td>50%</td> </tr> <tr> <td>c) <math>\frac{3}{4}</math></td> <td><math>\frac{6}{8}</math> or equivalent</td> <td>0.75</td> <td>75%</td> </tr> <tr> <td>d) <math>\frac{1}{5}</math></td> <td><math>\frac{2}{10}</math> or equivalent</td> <td>0.2</td> <td>20%</td> </tr> <tr> <td>e) <math>\frac{1}{10}</math></td> <td><math>\frac{2}{20}</math> or equivalent</td> <td>0.1</td> <td>10%</td> </tr> </tbody> </table>			Question	fraction	decimal	percentage	a) $\frac{1}{4}$	$\frac{2}{8}$ or equivalent	0.25	25%	b) $\frac{1}{2}$	$\frac{2}{4}$ or equivalent	0.5	50%	c) $\frac{3}{4}$	$\frac{6}{8}$ or equivalent	0.75	75%	d) $\frac{1}{5}$	$\frac{2}{10}$ or equivalent	0.2	20%	e) $\frac{1}{10}$	$\frac{2}{20}$ or equivalent	0.1	10%
Question	fraction	decimal	percentage																											
a) $\frac{1}{4}$	$\frac{2}{8}$ or equivalent	0.25	25%																											
b) $\frac{1}{2}$	$\frac{2}{4}$ or equivalent	0.5	50%																											
c) $\frac{3}{4}$	$\frac{6}{8}$ or equivalent	0.75	75%																											
d) $\frac{1}{5}$	$\frac{2}{10}$ or equivalent	0.2	20%																											
e) $\frac{1}{10}$	$\frac{2}{20}$ or equivalent	0.1	10%																											
3 Write these fractions as a decimal:  a) 0.2                      d) 0.9 b) 0.4                      e) 0.27 c) 0.7                      f) 0.85			6 marks	7	Put these in order, starting with the smallest:  $\frac{1}{8}$ $\frac{2}{10}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{3}{5}$	1 mark																								
4 Write these fractions in their simplest form:  a) $\frac{1}{4}$ d) $\frac{1}{2}$  b) $\frac{3}{7}$ e) $\frac{1}{3}$  c) $\frac{2}{9}$ f) $\frac{1}{5}$			6 marks	8	Find:  a) 4    d) 140 b) 20    e) 720 c) 300    f) 375	6 marks																								
5 Write these percentages as fractions (in their simplest form):  a) $\frac{3}{10}$ d) $\frac{1}{4}$  b) $\frac{1}{10}$ e) $\frac{17}{20}$  c) $\frac{1}{2}$ f) $\frac{1}{20}$			6 marks	9	At Harry's birthday party there were 40 guests. 55% of the guests were boys. How many guests were girls?  a) 18 were girls  b) $\frac{2}{8}$ or $\frac{1}{4}$  c) 0.25	3 marks																								
10 150 people were waiting at Aberdeen Railway Station. $\frac{1}{4}$ were waiting for a train to Inverness $\frac{2}{10}$ were waiting for a train to Dundee. The rest were waiting for the train to Glasgow.			6 marks	10	a) 60    d) 60% b) 45    e) 0.25 c) 45	6 marks																								

11	At the supermarket, after Easter, all chocolate eggs were discounted by 60%.  a) <b>£4.50 - £2.70 = £1.80</b>  b) <b>£12 - £7.20 = £4.80</b>	2 marks
12	Jenny has 3 cases that each weigh 10kg. Her baggage allowance is 35kg.  a) <b>5kg</b>  b) $\frac{1}{7}$	2 marks
13	Find the fraction (in its simplest form) that is not:  a) $\frac{5}{100}$ or $\frac{1}{20}$  b) $\frac{40}{100}$ or $\frac{2}{5}$  c) $\frac{55}{100}$ or $\frac{11}{20}$	3 marks
14	Which voucher would be best value to use at the supermarket for this shopping list?  <b>Total shop = £32.50</b>  <b>Half price voucher TOTAL = £16.25</b>  <b>10% off voucher = £3.25 off</b>  <b>Discounted TOTAL = £29.25</b>  <b>Best value is the Half price voucher.</b>	1 mark