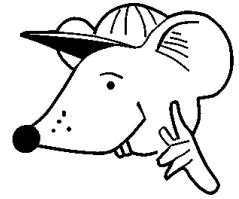


MATHEMATICS



N.S. Yr. 5 P.25

Find fractions of numbers or quantities.

Equipment

Paper, pencil, ruler

MathSphere

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Concepts

Multiples of simple fractions

Children should be able to find multiples of a simple fraction of a familiar quantity such as **three tenths** of **30** or **100** or **500** and **five sixths** of **18** or **24** or **120**. The best approach to this type of problem is to find one tenth or one sixth first and then multiply by the numerator.

Eg. Find $\frac{3}{10}$ of **500**

$\frac{1}{10}$ of **500** is **50**, therefore $\frac{3}{10}$ of **500** is $3 \times 50 = 150$.

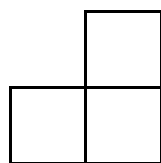
They should be able to find multiples of a simple fraction of £1 and one metre such as four fifths of a pound. This should be done by first changing the larger unit to smaller units (eg. pounds to pence or metres to centimetres).

Children should understand that a diagram such as:

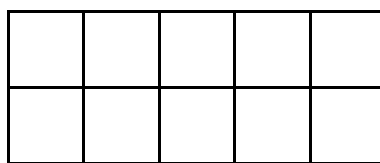


Represents the sum $3 \div 5$. Imagine this as three chocolate bars, each divided into five parts.

They should be able to say what fraction of a large shape is a smaller shape where multiples of simple fractions are concerned. For example, what fraction is shape A of shape B?



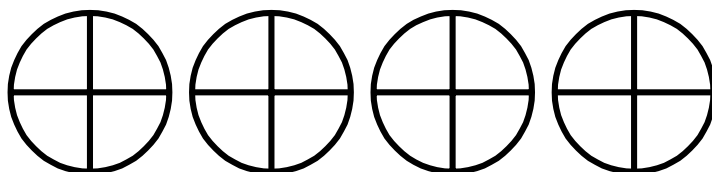
Shape A



Shape B

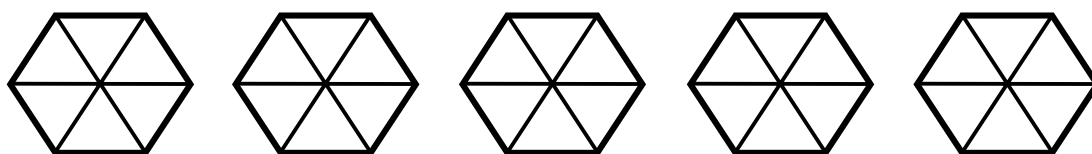
When tackling this type of problem, make sure each shape is divided into the same size sections. In this case there are ten such sections in Shape B and three such sections in shape A, therefore Shape A is **the same as** $\frac{3}{10}$ of Shape B.

1. Here are some cakes.



Colour $2\frac{1}{4}$ cakes.

2. Here are some hexagonal biscuits.

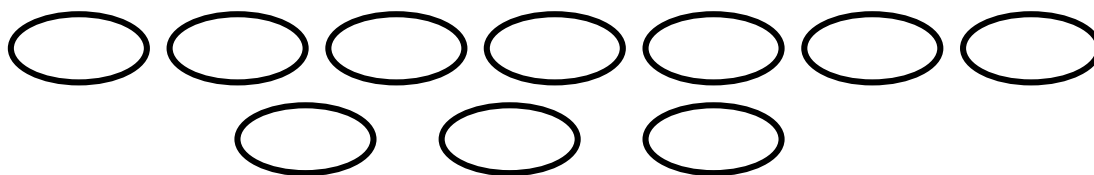


Colour $3\frac{2}{3}$ of the biscuits.

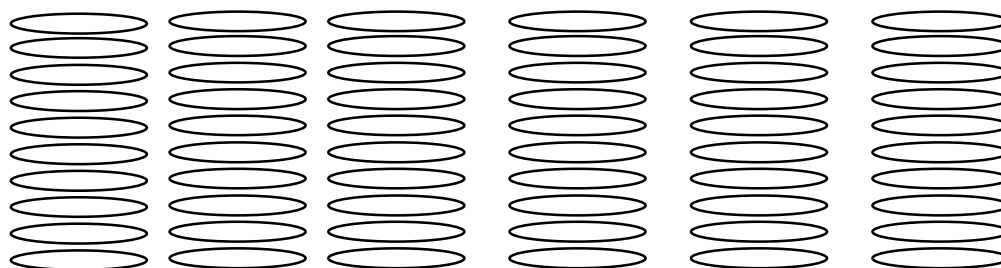
And don't eat them,
please.



3. Multy has ten biscuits and eats $2\frac{3}{4}$ biscuits. Shade the part Multy eats.



4. Michelle has six piles of coins. Each pile has ten coins. Shade $3\frac{2}{5}$ piles.



1. What division does this diagram show?



What is the answer to this sum?

2. What division does this diagram show?



What is the answer to this sum?

3. What division does this diagram show?



What is the answer to this sum?

4. Try to answer these sums without drawing a diagram, but do draw a diagram if you find it helps.

a) $7 \div 8$ b) $3 \div 7$ c) $4 \div 9$ d) $8 \div 13$ e) $2 \div 7$

5. Answer the following questions.

a) What is three fifths of 25?

b) What is seven tenths of sixty?

c) Laura has twenty five dolls. Two fifths of them come from Sweden. How many come from Sweden?

d) Six sevenths of the people that work in a company are over forty years old. There are forty nine people altogether. How many are **not** over forty years old?

1. What is **two thirds** of these numbers?

- a) 24 b) 27 c) 60 d) 48 e) 99 f) 300 g) 660

2. What is **two fifths** of these numbers?

- a) 15 b) 30 c) 60 d) 100 e) 550 f) 125 g) 35

3. What is **two ninths** of these numbers?

- a) 18 b) 36 c) 54 d) 63 e) 900 f) 180 g) 72

4. What is **seven tenths** of these numbers?

- a) 40 b) 60 c) 100 d) 180 e) 240 f) 30 g) 900

5. What is **three quarters** of these numbers?

- a) 8 b) 12 c) 60 d) 32 e) 160 f) 240 g) 100

6. a) How many pennies are there in a pound (£) ?

b) What is **sixth tenths** of a pound?

c) What is **four fifths** of a pound?

d) What is **thirty five hundredths** of a pound?

7. a) How many centimetres are there in a metre?

b) What is $\frac{13}{20}$ of a metre?

c) What is $\frac{3}{10}$ of a metre?

d) What is $\frac{7}{10}$ of a metre?

8. a) What fraction of a pound is 75p ?

b) What fraction of a pound is 88p ?

c) What fraction of a metre is 90cm ?

d) What fraction of a metre is forty five centimetres?

1. What is **three twentieths** of these numbers?

- a) 60 b) 80 c) 20 d) 100 e) 200 f) 160 g) 240

2. What is **nine tenths** of these numbers?

- a) 50 b) 70 c) 100 d) 200 e) 400 f) 450 g) 560

3. What is **thirty hundredths** of these numbers?

- a) 200 b) 100 c) 700 d) 900 e) 800 f) 400 g) 300

4. What is **five sixths** of these numbers?

- a) 12 b) 18 c) 6 d) 24 e) 72 f) 120 g) 240

5. What is **three sixths** of these numbers?

- a) 12 b) 24 c) 60 d) 600 e) 48 f) 360 g) 660

6. a) How many pennies are there in a pound (£)?

b) What is **three quarters** of a pound?

c) What is **eight tenths** of a pound?

d) What is **two fifths** of a pound?

7. a) How many centimetres are there in a metre?

b) What is $\frac{4}{5}$ of a metre?

c) What is $\frac{18}{20}$ of a metre?

d) What is $\frac{33}{100}$ of a metre?

8. a) What fraction of a pound is 28p ?

b) What fraction of a pound is 42p ?

c) What fraction of a metre is 56cm ?

d) What fraction of a metre is twenty two centimetres?

1. Write these fractions to the **nearest whole number**.

a) $8\frac{1}{5}$ b) $12\frac{15}{20}$ c) $9\frac{7}{10}$ d) $6\frac{1}{6}$ e) $9\frac{89}{100}$ f) $15\frac{2}{3}$

2. Write these fractions in order of size, smallest first.

$2\frac{2}{5}$ $3\frac{1}{10}$ $2\frac{7}{10}$ $2\frac{1}{2}$ $3\frac{1}{5}$ $2\frac{4}{5}$

3. What fraction of one kilometre is 200 metres?
4. What fraction of one kilogramme is 500 grammes?
5. What fraction of one litre is 600 millilitres?
6. What fraction of one day is one hour?
7. What fraction of one day is four hours?
8. What fraction of one day is eight hours?
9. What fraction of one week is three days?
10. What fraction of one book of 320 pages is one chapter of 32 pages?
11. I have fifteen books on a shelf. Five of them have red covers. What fraction have red covers?
12. What fraction of 1 Kg is 450g ?
13. What fraction of 1 litre is 750 ml?
14. What fraction of one leap year is the month of February?
15. What fraction of June is the period from 5th June to 12th June inclusive? (Inclusive means include **all** the days in this period.)

Answers**Page 3**

1. Colour any two whole cakes and a quarter of a cake (or equivalent in bits).
2. Colour any three whole cakes and $\frac{2}{3}$ of a cake (or equivalent in bits).
3. Shade any two biscuits and $\frac{3}{4}$ of a biscuit (or equivalent).
4. Shade three piles and four extra coins (or equivalent).

Page 4

1. $3 \div 5$ $\frac{3}{5}$
2. $3 \div 6$ $\frac{3}{6}$
3. $5 \div 6$ $\frac{5}{6}$
4. a) $\frac{7}{8}$ b) $\frac{3}{7}$ c) $\frac{4}{9}$ d) $\frac{8}{13}$ e) $\frac{2}{7}$
5. a) 15 b) 42 c) 10 d) 7

Page 5

1. a) 16 b) 18 c) 40 d) 32 e) 66 f) 200 g) 440
2. a) 6 b) 12 c) 24 d) 40 e) 220 f) 50 g) 14
3. a) 4 b) 8 c) 12 d) 14 e) 200 f) 40 g) 16
4. a) 28 b) 42 c) 70 d) 126 e) 168 f) 21 g) 630
5. a) 6 b) 9 c) 45 d) 24 e) 120 f) 180 g) 75
6. a) 100 b) 60p c) 80p d) 35p
7. a) 100 b) 65 cm c) 30 cm d) 70 cm
8. a) $\frac{75}{100}$ or $\frac{3}{4}$ b) $\frac{88}{100}$ or $\frac{22}{25}$ c) $\frac{90}{100}$ or $\frac{9}{10}$ d) $\frac{45}{100}$ or $\frac{9}{20}$

Page 6

1. a) 9 b) 12 c) 3 d) 15 e) 30 f) 24 g) 36
2. a) 45 b) 63 c) 90 d) 180 e) 360 f) 405 g) 504
3. a) 60 b) 30 c) 210 d) 270 e) 240 f) 120 g) 90
4. a) 10 b) 15 c) 5 d) 20 e) 60 f) 100 g) 200
5. a) 6 b) 12 c) 30 d) 300 e) 24 f) 180 g) 330
6. a) 100 b) 75p c) 80p d) 40p
7. a) 100 b) 80 cm c) 90 cm d) 33 cm
8. a) $\frac{28}{100}$ or $\frac{7}{25}$ b) $\frac{42}{100}$ or $\frac{21}{50}$ c) $\frac{56}{100}$ or $\frac{14}{25}$ d) $\frac{22}{100}$ or $\frac{11}{50}$

Page 7

1. a) 8 b) 13 c) 10 d) 6 e) 10 f) 16
2. $\frac{2^2}{5}$, $2\frac{1}{2}$, $\frac{2^7}{10}$, $\frac{2^4}{5}$, $3\frac{1}{10}$, $3\frac{1}{5}$
3. $\frac{200}{1000}$ or $\frac{1}{5}$ 4. $\frac{500}{1000}$ or $\frac{1}{2}$ 5. $\frac{600}{1000}$ or $\frac{3}{5}$
6. $\frac{1}{24}$ 7. $\frac{4}{24}$ or $\frac{1}{6}$ 8. $\frac{8}{24}$ or $\frac{1}{3}$
9. $\frac{3}{7}$ 10. $\frac{32}{320}$ or $\frac{1}{10}$ 11. $\frac{5}{15}$ or $\frac{1}{3}$
12. $\frac{450}{1000}$ or $\frac{9}{20}$ 13. $\frac{750}{1000}$ or $\frac{3}{4}$ 14. $\frac{29}{366}$
15. $\frac{8}{30}$ or $\frac{4}{15}$