

Year 6 into 7
Mathematics
Workbook

Fractions
of
Amounts

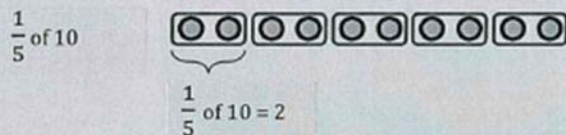
Answers

Unit 15: Fractions of amounts

15.1 Fractions of an Amount

Concept Corner

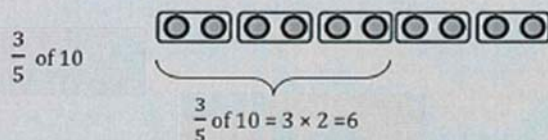
Finding fractions of quantities:



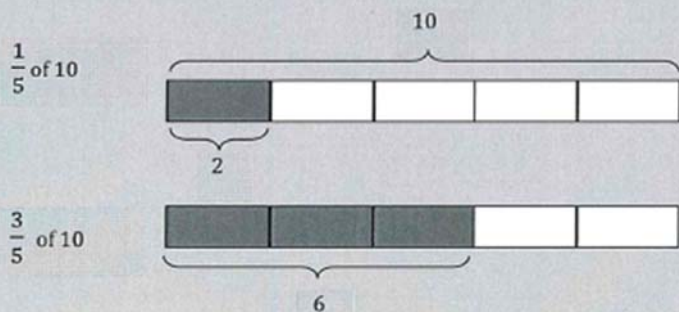
To calculate $\frac{1}{5}$ of 10, split 10 into 5 equal groups.

This is equivalent to calculating $10 \div 5 = 2$.

Once we know $\frac{1}{5}$ of 10, we can calculate $\frac{3}{5}$ of 10.



Bar models can also be used to represent these calculations.



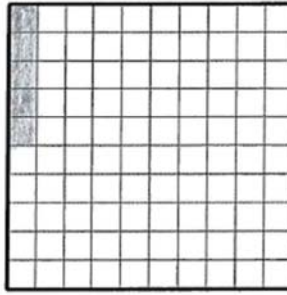
1. a) Shade in $\frac{1}{4}$ of the rectangle. *eg.*



- b) Calculate $\frac{1}{4}$ of 8.

2

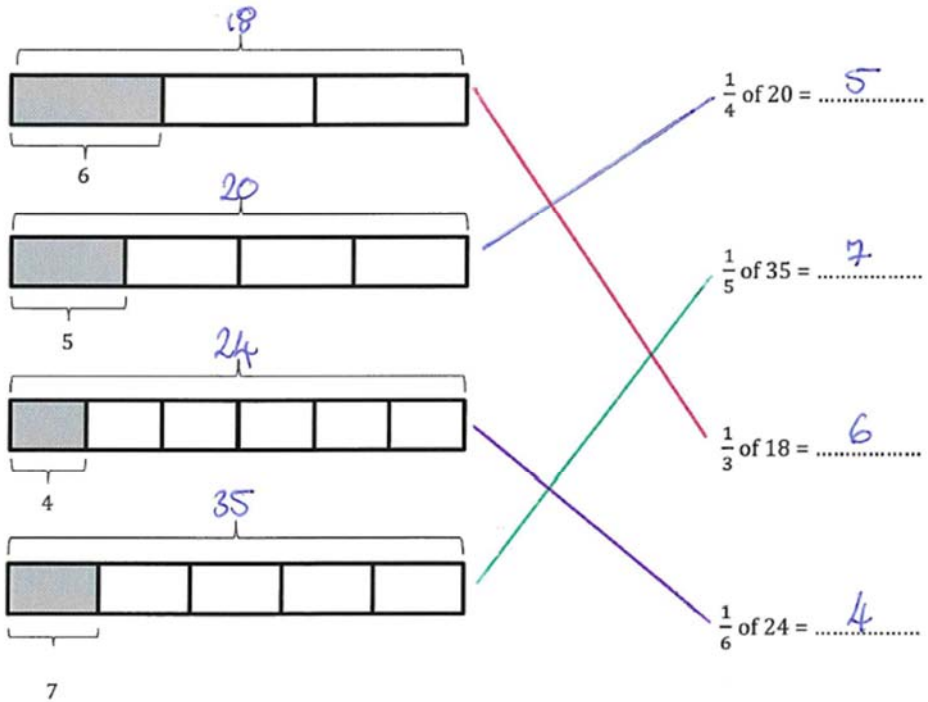
2. a) Shade in $\frac{1}{5}$ of the 100 grid. e.g.



b) Calculate $\frac{1}{5}$ of 100.

5

3. Match the bar model to the calculation and fill in the blanks.



4. Calculate

a) $\frac{1}{2}$ of 12 = 6

d) $\frac{1}{8}$ of 40 = 5

b) $\frac{1}{4}$ of 32 = 8

e) $\frac{1}{12}$ of 84 = 7

c) $\frac{1}{5}$ of 15 = 3

5. In a school exactly half of the students are boys.
There are 460 students in the school. How many boys are there in the school?

230 boys.

6. Tim gets £12 a week and saves $\frac{1}{3}$ of this.
a) How much money does he save?

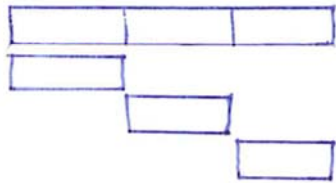
£4

- b) How much money does he spend?

£8



7. Hakeem has £11.85.
He gives $\frac{1}{3}$ of the money to Jesse.
Hakeem then gives $\frac{1}{2}$ of what is left to Kyle.
How much money does everyone have now?



Starting amount
Jesse = £3.95
Kyle = £3.95
Hakeem = £3.95

8. Liam has 64Gb total storage on his smartphone. His photos take up $\frac{1}{5}$ of the total storage.
How much storage do his photos take up?

12.8Gb


9. Calculate the following. You may give your answers as fractions or decimals.

a) $\frac{1}{2}$ of 19 = 9.5 = $9\frac{1}{2}$

b) $\frac{1}{10}$ of 25 = 2.5 = $2\frac{1}{2}$

c) $\frac{1}{4}$ of 37 = 9.25 = $9\frac{1}{4}$

d) $\frac{1}{5}$ of 42 = 8.4 = $8\frac{2}{5}$

 e) $\frac{1}{3}$ of 50 = 16.6 = $16\frac{2}{3}$

10. Fill in the gaps below to calculate $\frac{3}{5}$ of 30:

$\frac{1}{5}$ of 30 =6.....

$\frac{3}{5}$ of 30 = 3 ×6..... =18.....

11. Calculate:

a) $\frac{3}{4}$ of 24 = 18

f) $\frac{9}{4}$ of 28 = 63

b) $\frac{4}{5}$ of 20 = 16

g) $\frac{13}{6}$ of 30 = 65

c) $\frac{3}{7}$ of 14 = 6



h) $\frac{5}{2}$ of 14 = 35

d) $\frac{3}{8}$ of 64 = 24



i) $\frac{3}{5}$ of £21 = 12.6

12. In a Chemistry test there are 80 marks. Chris gets $\frac{3}{5}$ of the marks.

How many marks does he get?

48 marks.

13. In a school, $\frac{5}{9}$ of the students have pets. There are 558 students in the school.

a) How many of the students have pets?

310 students.

b) How many do not have pets?

248 students.

14. There are 250 students in Year 7. $\frac{2}{5}$ of these students walk to school, $\frac{3}{10}$ of them take the bus and the remainder are brought by car. How many students:

a) Walk to school?

100 students

b) Come by bus?

75 students

c) Come by car?

75 students

15. Which is greater:

a) $\frac{3}{5}$ of £6.25 or $\frac{5}{8}$ of £5.92?



b) $\frac{2}{7}$ of £42.70 or $\frac{2}{3}$ of £18.30? *Equal.*

16. Write <, = or > between the calculations as appropriate:

a) $\frac{3}{7}$ of 63 = $\frac{9}{5}$ of 15

b) $\frac{4}{10}$ of 30 < $\frac{3}{5}$ of 40

c) $\frac{7}{15}$ of 12 = $\frac{12}{15}$ of 7

17. Match the bar models to the calculations and use these to help you calculate the whole:

Bar Model 1: Total 54, shaded part 18. Calculation: $\frac{1}{3}$ of 54 = 18.

Bar Model 2: Total 28, shaded part 7. Calculation: $\frac{1}{4}$ of 28 = 7.

Bar Model 3: Total 15, shaded part 6. Calculation: $\frac{1}{2}$ of 12 = 6.

Bar Model 4: Total 12, shaded part 3. Calculation: $\frac{1}{5}$ of 15 = 3.

18. Find the value of the number when:

a) $\frac{1}{2}$ of the number is 11 22

b) $\frac{1}{3}$ of the number is 8 24

c) $\frac{1}{7}$ of the number is 4 28

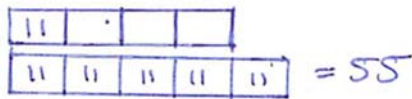
d) $\frac{1}{4}$ of the number is 7.3 29.2



19. $\frac{1}{3}$ of Jake's weekly pocket money is exactly £2.30.
How much pocket money does he get each week?

£6.90

20. $\frac{1}{4}$ of a packet of sweets contains 11 sweets. How many sweets will there be in five packets?



21. Find the value of:

a) Three times the number when $\frac{1}{6}$ of the number is 4

72

b) A half of the number when $\frac{1}{5}$ of the number is 8

20

c) One third of the number when $\frac{1}{8}$ of the number is 6

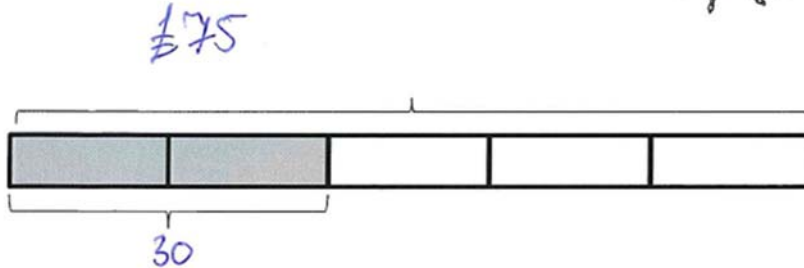
16

22. A coat is on sale and costs $\frac{2}{5}$ of its original price.

The coat now costs £30.

What was the original price of the coat?

You can use the bar model below to help.



23. Find the value of:

a) The number when $\frac{2}{3}$ of the number is 8

12

b) The number when $\frac{3}{5}$ of the number is 12

20

c) Half the number when $\frac{2}{9}$ of the number is 16

36



d) Half the number when $\frac{6}{7}$ of the number is 15

8.75



e) 75% when $\frac{3}{8}$ of the number is 6.5

13

- ★ 24. The perimeter of a rectangle is 30 cm. Each longer side is $\frac{2}{5}$ of the total perimeter.
a) What is the length of each shorter side?

$$3\text{cm}$$

- b) What fraction of the perimeter is each shorter side?

$$\frac{1}{10}$$

- ★ 25. Triangle ABC is isosceles. $AB = BC$. Side AB has length 3.2 cm.
Side AB is $\frac{2}{7}$ of the total perimeter of ABC.
Find the perimeter of triangle ABC.

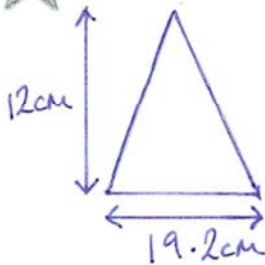
$$11.2\text{cm}$$

26. The perpendicular height of a triangle is 12 cm.

- a) If the base is $\frac{5}{8}$ of the height, find the area of the triangle.

$$45\text{cm}^2$$

- ★ b) In a different triangle, the height is $\frac{5}{8}$ of the base, find the area of the triangle.



$$\text{Area} = 115.2\text{cm}^2$$

27. A jug of water is 30% full. The volume of water in the jug is 240 ml.
Find the capacity of the jug in litres.

800ml



28. The smallest angle in a triangle is $\frac{1}{5}$ the size of the largest angle.

The largest angle in the same triangle is $\frac{5}{3}$ the size of the middle angle.

Find the size of each angle.

$20^\circ, 60^\circ, 100^\circ$



29. The smallest angle in a parallelogram is $\frac{2}{7}$ the size of the largest angle.

The longest side is $\frac{5}{4}$ the length of the shortest and the perimeter is 36 cm.

Make an accurate drawing of this parallelogram.

