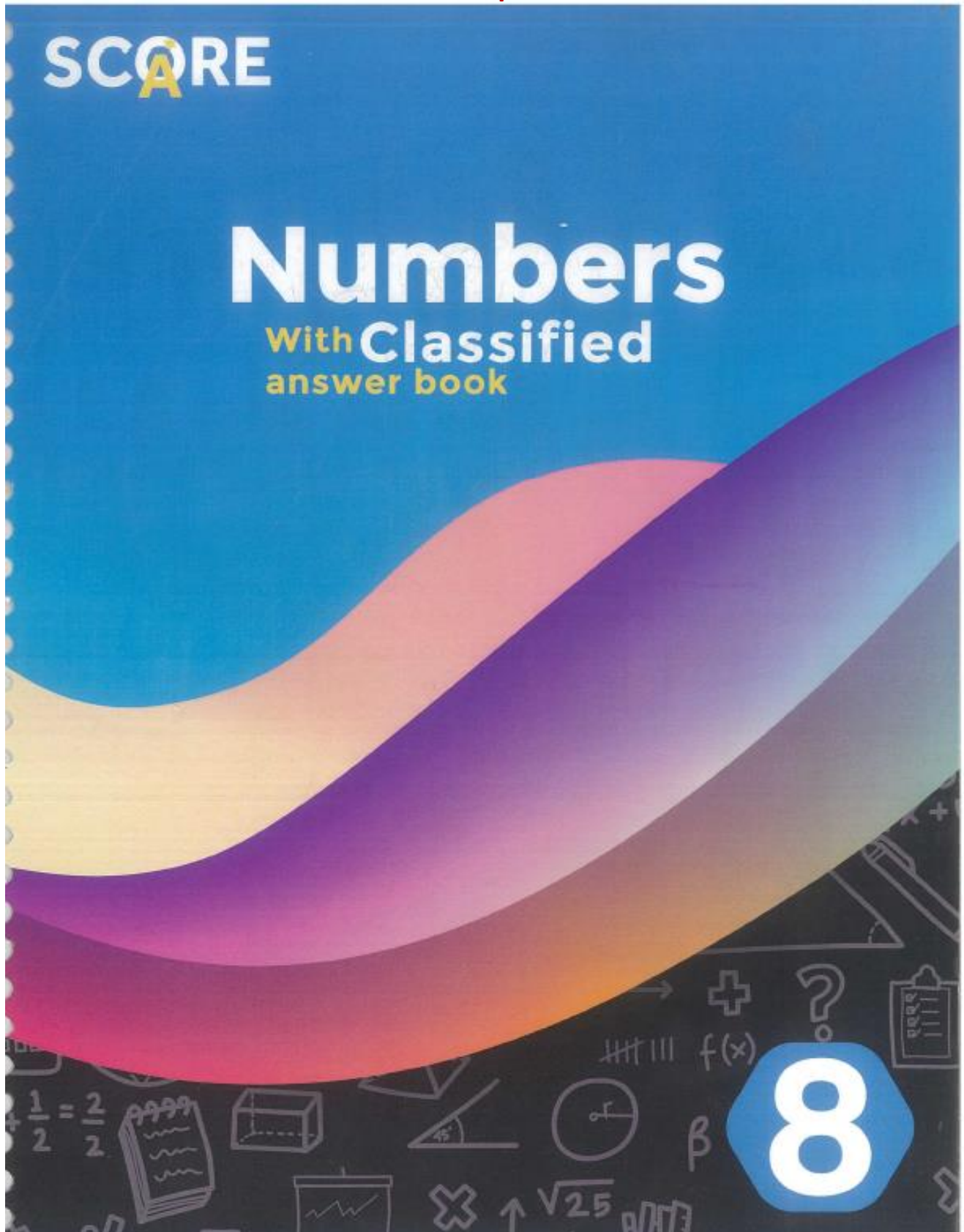


Classified – Percentage

P. 86 to p. 96



16- Percentage

1. There is 500 ml of tea in a teapot.

Alex pours 250 ml of the tea into a cup.

What percentage of the tea has Alex poured into the cup?

2. Tom and Lorna sat the same test. Tom scored 70% on the test.
Lorna scored 30 out of 40 marks. Who got the higher score?
Justify your answer.

3. There is 1 litre of tea in a teapot.
Alex pours 275 ml of the tea into a cup.

What percentage of the tea has Alex poured into the cup?

4. There are 55 chocolates in a tin. 20 of the chocolates are milk chocolate.
The rest are dark chocolate.
What percentage are dark chocolate?

5. Jonny eats 40% of a steak and ale pie.

Write this percentage as a fraction in its simplest form.

6. Kelly and Nasir both had maths tests last week.

Kelly scored $\frac{3}{4}$ and Nasir scored $\frac{1}{8}$

Who got the higher percentage score?

7. Felicity goes shopping with £120 and spends £50
on brightly coloured trainers.

What percentage of her money does she spend on trainers?

8. Dexter makes 20 cookies.

He eats 5 of the cookies and takes the rest to school.

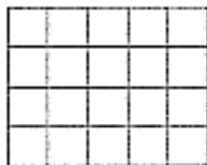
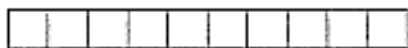
What percentage of the cookies does he take to school?

9. Each diagram in this question is drawn on a square grid.

50% of this diagram is shaded.



Shade 20% of each of the diagrams below.



10. Fill the gaps.

(a) 3 is % of 12

12 is % of 3

(b) a is 20% of b

b is % of a

11. In a quiz, Ravi answered 24 out of 40 questions correctly. What percentage of the questions did he answer correctly?

12. Here is a question from a survey.

In a time machine, would you like to go forwards or backwards in time?

People said 'Forwards', 'Backwards' or 'Don't know'.

Results:

Forwards

46%

Backwards

48%

Don't know ?

The bar for 'Don't know' has not been drawn.

What percentage of people said 'Don't know'?

13. Mr Mason asks 240 Year 11 students what they want to do next year.

15% of the students want to go to college.

$\frac{3}{4}$ of the students want to stay at school.

The rest of the students do not know.

Work out the number of students who do not know.

14. Mo spends £15 on ingredients to make 40 cookies.

He sells all 40 cookies for 50p each.

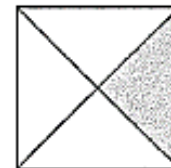
Work out Mo's percentage profit.

15. (a) Half of this square is shaded.

What percentage of the square is shaded?



(b) What percentage of this square is shaded?



16. I think of a number, 4%

of my number is 42

(a) What is 40% of my number?

(b) What is my number?

17. (a) Work out 5% of 360

(b) Work out 15% of 360

You can use part (a) to help you.

18. A newspaper printed this information about the world's population.

If the world was a village of 100 people,
6 people would have 59% of the total
wealth. The other 94 people would have the
rest.

On average, how many times as wealthy as one of the
other 94 people would one of these 6 people be?

19. A teacher said to a pupil:

To the nearest per cent $\frac{1}{6}$ is 17%

cent, The pupil said:

So, to the nearest per cent, $\frac{2}{6}$ must be 34%

Show that the pupil is wrong.

20. (a) Complete the sentences.

..... out of 10 is the same as 70%

10 out of 20 is the same as.....%

(b) Complete the sentence.

.....out of is the same as 5%

Now complete the sentence using different numbers.

.....out of is the same as 5%

21. A hotel has 56 guests.

35 of the guests are male.

(a) Work out 35 out of 56 as a percentage.

40% of the 35 male guests wear glasses.

(b) Write the number of male guests who wear glasses as a fraction of the 56 guests.

Give your answer in its simplest form.

22. Amina buys a television for £675
She pays a 20% deposit and then the rest of the money is paid in
monthly payments of £45
How many monthly payments will Amina need to pay?

23. Dexter is cycling to his friend's house.
After 1 hour and 45 minutes, he has completed 70% of his journey.
Assuming he continues at the same speed, what is his total journey time?

24. Which is greater? Justify your answer.

35% of 60

41% of 50

25. (a) Write the missing numbers.

$$50\% \text{ of } 80 = \underline{\hspace{2cm}}$$

$$5\% \text{ of } 80 = \underline{\hspace{2cm}}$$

$$1\% \text{ of } 80 = \underline{\hspace{2cm}}$$

- (b) Work out 56% of 80

You can use part (a) to help you.

26. Draw lines to match the boxes.

The first one is done for you.

To find 50% of a number ...	divide the number by 10
To find 10% of a number ...	divide the number by 2
To find 20% of a number ...	divide the number by 20
To find 5% of a number ...	divide the number by 100
To find 1% of a number ...	divide the number by 5

27. A teacher said to a pupil:

To the nearest per cent, $\frac{1}{6}$ is 17%

The pupil said:

So, to the nearest per cent, $\frac{2}{12}$ must be 34%

Show that the pupil is **wrong**.

28. (a) complete the sentences.

..... out of 100 is the same as 80%

5 out of 20 is the same as %

(b) Complete the sentence.

..... out of is the same as 5%

Now complete the sentence using **different** numbers.

..... out of is the same as 5%

29. Look at the information in the box.

$$\frac{16}{80} = 20\%$$

The information can help you work out other number facts.

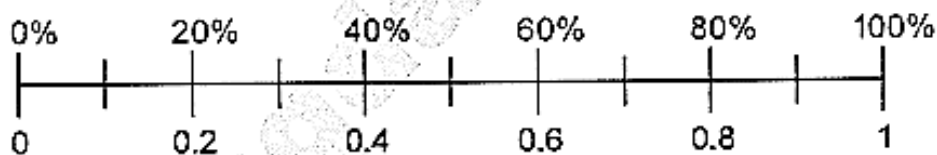
Fill in the missing numbers below.

$$\frac{32}{160} = \square \%$$

$$\frac{16}{40} = \square \%$$

$$\frac{\square}{80} = 60 \%$$

30. The scale shows both percentages and decimals.



Fill in the missing **decimals** in the gaps below.

The first one is done for you.

60% is the same as 0.6

30% is the same as

3% is the same as

31. Here is some information about A levels in 2002.

	English	Mathematics
Number of students	72 000	54 000
Percentage gaining grade A	19%	37%

How many more students gained grade A in mathematics than in English?

32. There are 40 students in a class.

60% of the students are boys. 25% of the boys have brown hair.

How many boys have brown hair?

_____ boys

33. The table shows the number of students in the school football club in 2018

	Boys	Girls
2018	40	25

In 2019, the number of boys decreased by 5% and the number of girls increased by 20%

How many boys and how many girls were in the club in 2019?

boys _____

girls _____

3 years later, she sells it for £1400

What is the percentage loss that Rosie has made?

35. In a sale, the price of a bike is reduced by 40%. The sale price of the bike is £192. How much did the bike cost before the sale?

Eng. Magda El-Labban