1.

A cat sleeps for **12 hours** each day.

50% of its life is spent asleep.

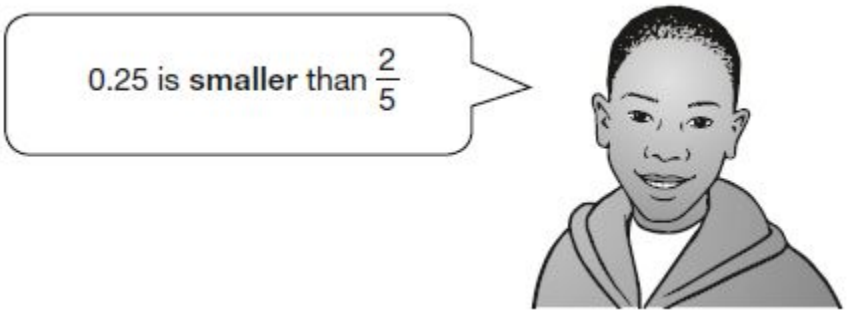
Write the missing percentage.

A koala sleeps for **18 hours** each day.

%	of its life is spent asleep.

1 mark

2. Adam says,



Explain why he is correct.

1 mark

3. Tick the fractions that are **equal** to 20%.

$\frac{1}{20}$ ☐

$\frac{20}{40}$ ☐

$\frac{1}{5}$ ☐

$\frac{3}{15}$ ☐

$\frac{2}{100}$ ☐

2 marks

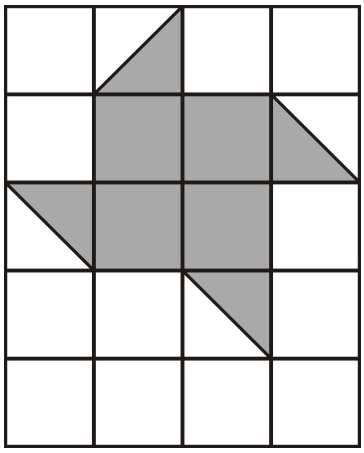
4. Write these in order of size, starting with the smallest.

$\frac{3}{4}$	0.34	0.7	43%
☐	☐	☐	☐

smallest

1 mark

5. Here is a grid of 20 squares.



What percentage of the grid is shaded?

%

1 mark

6. What is $\frac{5}{8}$ as a decimal?

1 mark

7. What is 10% of a half?

1 mark

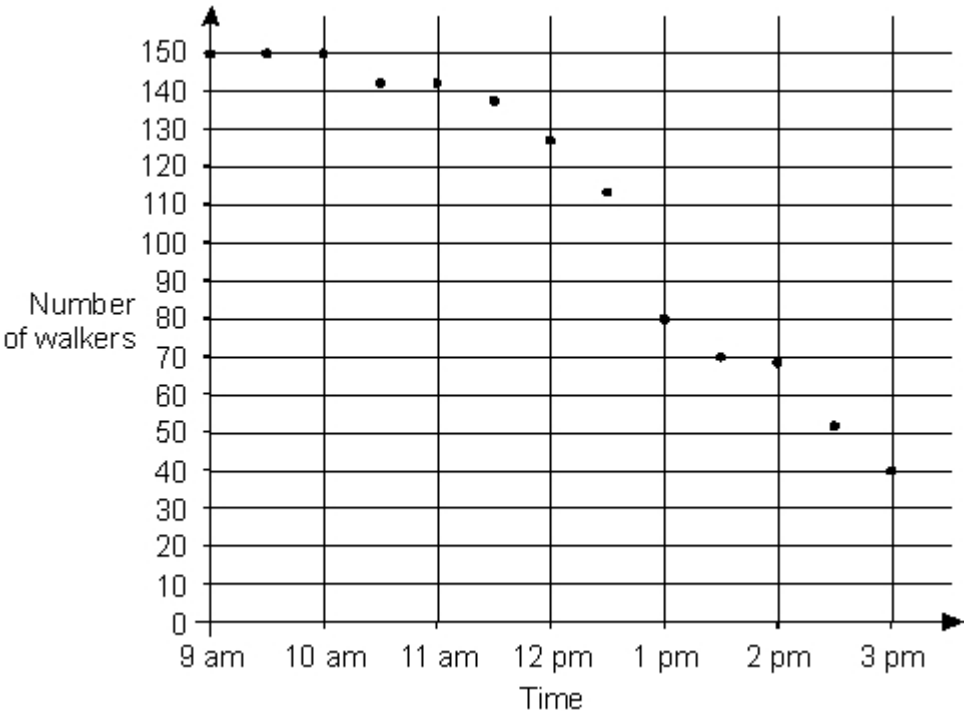
What percentage of 20 is 19?

%

1 mark

8. **150 people** take part in a walk.

This chart shows the number of people still walking at different times.



Use the chart to estimate the **time** when **two-thirds of the people** are still on the walk.

1 mark

What **percentage** of the people who started are **still on the walk at 3pm**?

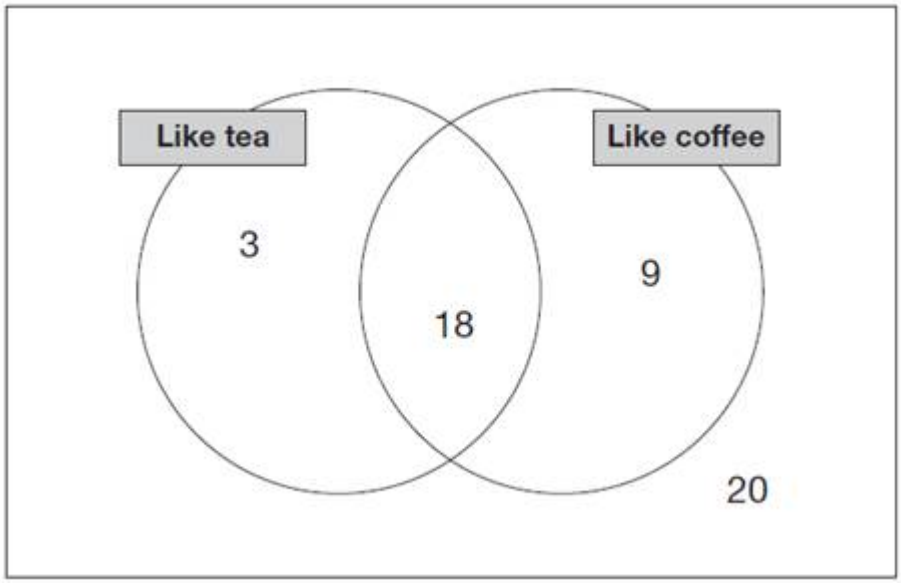
Show your method

%

2 marks

9. In a survey people were asked if they like tea and coffee.

The results are in this Venn diagram.



(a) What **percentage** of people in the survey like **both** tea and coffee?

%

1 mark

(b) What **percentage** of people in the survey do **not** like coffee?

%

1 mark

10. Write a **fraction** which is **greater than 0.7** and **less than 0.71**

1 mark

Write a **decimal** which is **greater than** $\frac{4}{7}$ and **less than** $\frac{5}{7}$.

1 mark

Mark schemes

1. 75

[1]

2. An explanation showing that 0.25 is less than $\frac{2}{5}$, e.g.

- $\frac{2}{5}$ is $0.4 > 0.25$
- 0.25 is $\frac{5}{20} < \frac{8}{20}$
- 0.25 is 25% and $\frac{2}{5}$ is 40% and 25% is smaller than 40%
- 0.25 is a quarter.

  You need 8 quarters to make 2, but only 5 lots of $\frac{2}{5}$ to make 2
- $\frac{2}{5} = 0.4$
- $\frac{1}{4}$ is $\frac{1}{4}$ smaller than a half, but $\frac{2}{5}$ is only $\frac{1}{10}$ smaller,

  so $\frac{1}{4}$ is smaller than $\frac{2}{5}$

Do not *accept vague, incomplete or incorrect explanations, e.g.*

- *Because* $\frac{1}{4}$ *is bigger than* $\frac{2}{5}$
- *Because* $\frac{1}{4}$ *comes first on a number line*
- *Because 0.25 is* $\frac{1}{4}$

Accept $\frac{2.5}{10}$ *as an equivalent to* $\frac{1}{4}$ *in an explanation when comparing to* $\frac{4}{10}$

[1]

3. Award **TWO** marks for two boxes ticked correctly, as shown:

$\frac{1}{20}$	☐
$\frac{20}{40}$	☐
$\frac{1}{5}$	✓
$\frac{3}{15}$	✓
$\frac{2}{100}$	☐

If the answer is incorrect, award **ONE** mark for:

- only **ONE** box ticked correctly and no incorrect boxes ticked
- **TWO** boxes ticked correctly and **ONE** incorrect box ticked.

Accept alternative unambiguous positive indication of the correct answer, e.g. Y.

Up to 2m

[2]

4. Numbers in order as shown:

0.34	43%	0.7	$\frac{3}{4}$

Accept use of equivalent fractions, decimals or percentages, eg 0.34, 0.43, 0.7, 0.75

[1]

5. 30%

Do not *accept equivalent fractions or decimals.*

[1]

6. 0.625

[1]

7.

(a) $\frac{1}{20}$ or equivalent

Accept equivalent fractions, decimals or percentages, eg:

- *5%*
- *0.05*
- $\frac{5}{100}$

***Do not accept** 5 without a percentage sign*

1

(b) 95

***Do not accept** equivalent fractions or decimals*

1

[2]

8.

(a) Answer in the range 12:30pm to 1:00pm exclusive.

Accept answers with or without 'pm'.

1

(b) Award **TWO** marks for the correct answer of $26\frac{2}{3}$ % **OR** 26.6%

*Accept 26.6% **OR** 26.7% **OR** 26.6 ... % **OR** 27%*

*Accept for **ONE** mark 26%*

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

40 ÷ 150 × 100

Answer need not be obtained for the award of the mark.

Up to 2

[3]

9.

(a) 36

***Do not accept** equivalent fractions or decimals*

1

(b) 46

***Do not accept** equivalent fractions or decimals*

1

[2]

10.

(a) Any fraction greater than 7/10 AND less than 71/100, eg:

- 141/200

Accept decimal fractions which fit the criteria, eg:

- ***0.705***

1

(b) Any decimal greater than 0.571428 recurring
AND less than 0.714285 recurring, eg:

- 0.6

Do NOT *accept non-decimal fractions, eg:*

- $^{9}/_{14}$ *OR* $^{4.5}/_{7}$

1

[2]