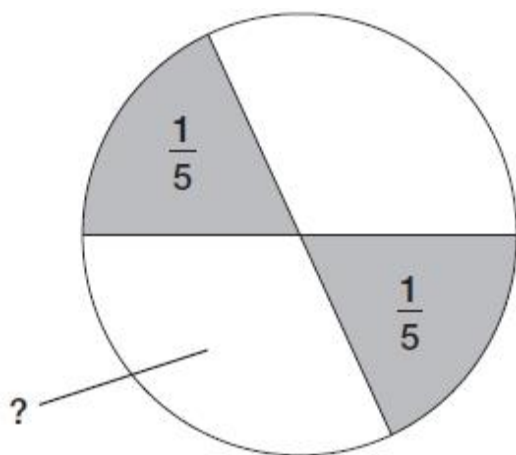


**Q1.**

In this circle, each shaded part is  $\frac{1}{5}$  of the area of the circle.

The two white parts have equal areas.



Not  
drawn  
accurately

What fraction of the circle is **one** of the white areas?

Show  
your  
method

A large rectangular grid for showing the method. On the left side, there is a rounded bracket containing the text "Show your method". At the bottom right of the grid, there is a small empty rectangular box.

2 marks

**Q2.**

In a class, 18 of the children are girls.

A quarter of the children in the class are boys.

Altogether, how many children are there in the class?

Show your method

2 marks

**Q3.**

Here is a number line.



What is the value of **X**?

X =

1 mark

Estimate the value of **Y**.

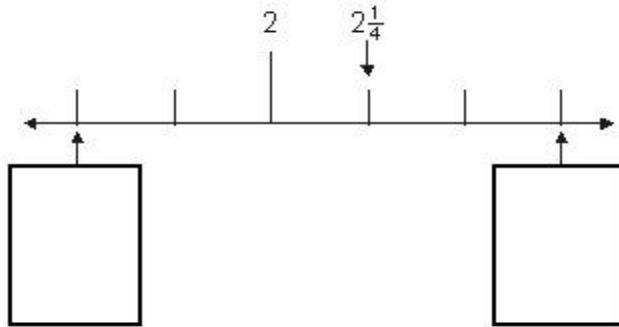
Y =

1 mark

**Q4.**

Here is part of a number line.

Write in the two missing numbers.



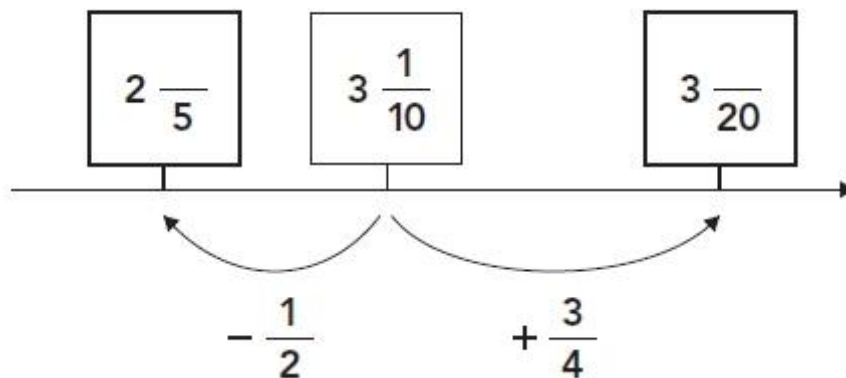
2 marks

**Q5.**

The diagram shows part of a number line.

Two of the fractions are not complete.

Write the missing numerator in each box

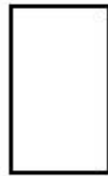
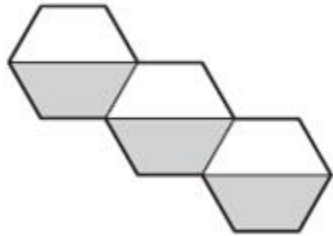
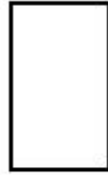
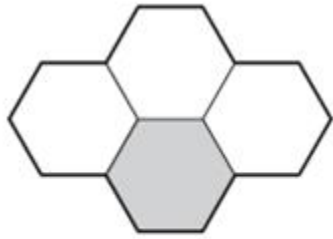


2 marks

**Q6.**

Here are three shapes made from regular hexagons.

Write the **fraction** of each shape that is shaded.

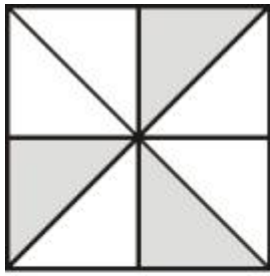


2 marks

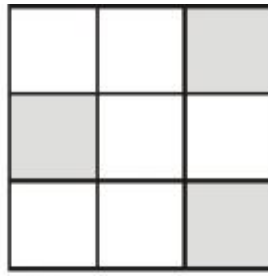
**Q7.**

Each of these diagrams is divided into equal parts.

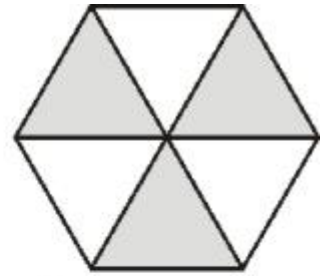
Some of the parts are shaded.



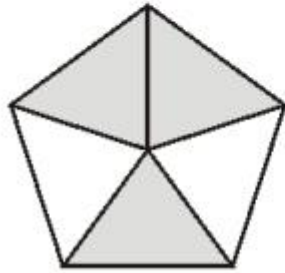
A



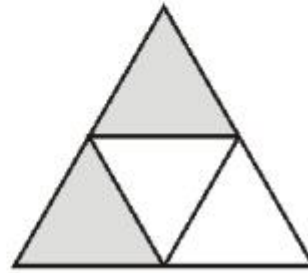
B



C



D



E

Write the letters of all the diagrams that have exactly  $\frac{1}{2}$  shaded.

\_\_\_\_\_ 1 mark

Which of the diagrams has exactly  $\frac{1}{3}$  shaded?

1 mark

**Q8.**

Amy did a survey of what time people get up on a Sunday morning. This table shows her results for 150 people.

Time	number of people
before 7 am	13
7:00 am to 7:59 am	28
8:00 am to 8:59 am	59
9:00 am to 9:59 am	36
10 am and after	14

Look at the table.

How many people get up at **8 am or later**?

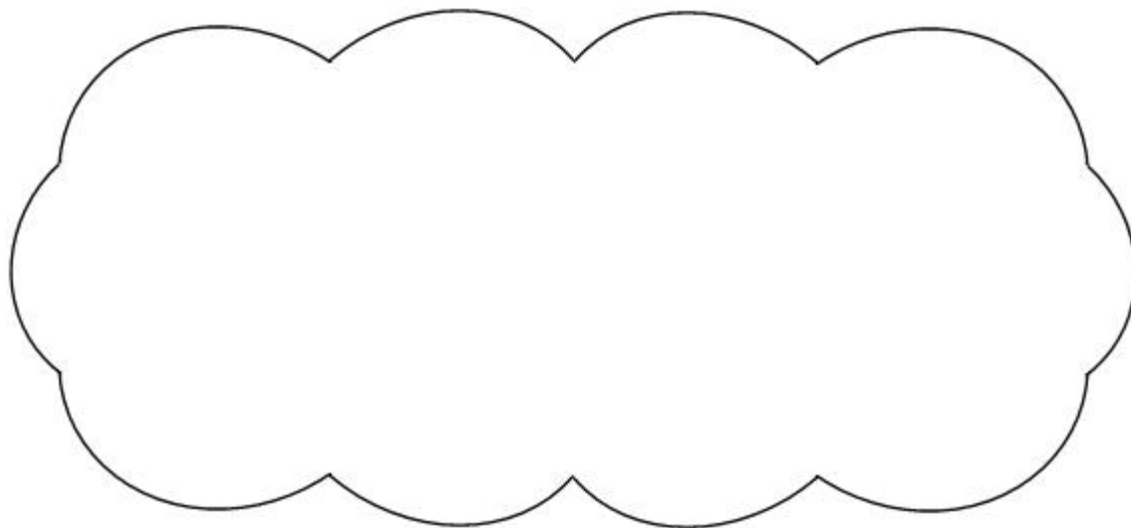
1 mark

Amy says,

***'Two-thirds of the 150 people in the survey get up before 9 am.'***

Amy is correct.

Explain how you know.



1 mark

### Q9.

(a) Write numbers in the boxes to make this fraction calculation correct.

$$\frac{1}{\square} + \frac{\square}{5} = \frac{7}{10}$$

1 mark

(b) Now write two **different** numbers to make the calculation correct.

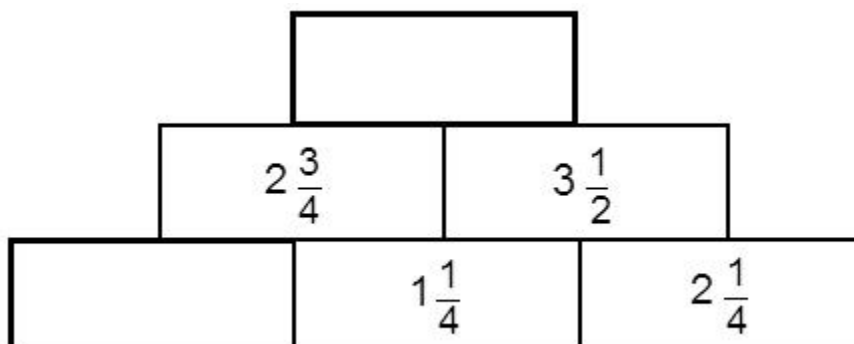
$$\frac{1}{\square} + \frac{\square}{5} = \frac{7}{10}$$

1 mark

**Q10.**

In this diagram, the number in each box is the **sum** of the two numbers below it.

Write the missing numbers.



2 marks

## Mark schemes

### Q1.

$$\frac{3}{10} \text{ or equivalent}$$

*Accept equivalent fractions, decimals or percentages*

2

**or**

Shows or implies a complete correct method and no conceptual errors, eg:

- Shaded fraction is  $\frac{1}{5} + \frac{1}{5} = \frac{2}{5}$

$$\text{Fraction of total white area} = 1 - \frac{2}{5} = \frac{3}{5}$$

$$\frac{3}{5} \div 2$$

- $\frac{1}{5} + \frac{1}{5} = 20\% + 20\% = 30\%$  (error)

White area = 70%

Each white area = 35%

*! 30 with no % sign*

*Accept for 1m as evidence of a correct method*

$$\text{! } \frac{1.5}{5} \text{ or } \frac{1\frac{1}{2}}{5}$$

*Accept for 1 as evidence of a correct method*

*(incorrect notation for  $\frac{3}{5} \div 2$ )*

**Do not accept** conceptual errors seen, eg:

- $\frac{1}{5} + \frac{1}{5} = \frac{2}{10}$

- $\frac{1}{5} + \frac{1}{5} = 5\% + 5\% = 10\%$

- $\frac{6}{10} \div 2 = \frac{3}{5}$

1

[2]

### Q2.

Award **TWO** marks for the correct answer of 24

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:



- $18 \div 3 \times 4 =$  wrong answer

**OR**

- $18 \div 3 = 6$

$6 + 18 =$  wrong answer

*Working must be carried through to reach an answer for the award of **ONE** mark.*

**OR**

- a 'trial and improvement' method, eg

$$18 \text{ girls} + 14 \text{ boys} = 32 \quad 32 \div 4 = 8$$

$$18 \text{ girls} + 10 \text{ boys} = 28 \quad 28 \div 4 = 7$$

$$18 \text{ girls} + 4 \text{ boys} = 22 \quad 22 \div 4 =$$

*A 'trial and improvement' method must show evidence of improvement, but a final answer need not be reached for the award of **ONE** mark.*

Up to 2  
U1

[2]

**Q3.**

- (a) 0.7

*Accept equivalent fractions.*

1

- (b) Answer in the range 0.3 to 0.35 exclusive

*Accept fractions, eg  $\frac{1}{3}$*

**Do not accept 0.3 OR 0.35**

1

*If the answer to (a) is in the range 0.3 to 0.35 exclusive **AND** the answer to (b) is 0.7, then award **ONE** mark for (b).*

[2]

**Q4.**

- (a)  $1\frac{1}{2}$  in the first box

*Accept equivalent fractions or decimals, eg 1.5*

1

- (b)  $2\frac{3}{4}$  in the second box

*Accept equivalent fractions or decimals, eg 2.75*

1

[2]

**Q5.**

Completes both fractions correctly, ie



2

*or*

Completes one of the fractions correctly

**OR**

Shows both correct values, even if they are not fractions in their simplest forms, eg

- $2\frac{6}{10}$  and 3.85 seen

1

[2]

**Q6.**

Award **TWO** marks for three fractions correct as shown:

$$\frac{1}{4}$$

**AND**

$$\frac{1}{2}$$

**AND**

$$\frac{1}{3}$$

If the answer is incorrect, award **ONE** mark for two fractions correct.

*Accept equivalent fractions, eg*

$$\frac{3}{6} \text{ for } \frac{1}{2}$$

$$\frac{2}{6} \text{ for } \frac{1}{3}$$

Up to 2

[2]

**Q7.**

(a) C **AND** E

*Letters may be given in either order.*

(b) B

1

1

[2]

**Q8.**

(a) 109

1

(b) An explanation that recognises that 100 people get up before 9am which is two-thirds of the total (150).

■ '13 + 28 + 59 = 100 which is two-thirds of the total'

■ ' $\frac{1}{3}$  of 150 = 50 and  $2 \times 50 = 100$ '

■ ' $\frac{2}{3}$  of 150 is 100'

■ '36 + 14 = 50 which is one-third after 9am'

**Do not accept vague or incomplete explanations, eg:**

■ 'One-third are 9 o'clock or later'

■ '100 got up at 9am'

■ 'Twice as many got up before 9am.'

■ '13 + 28 + 59 = 100'

U1

[2]

**Q9.**

(a) Gives a pair of numbers to make the calculation correct, eg:

•  $\frac{1}{\boxed{2}} + \frac{\boxed{1}}{5}$

•  $\frac{1}{\boxed{10}} + \frac{\boxed{3}}{5}$

Accept the following

•  $\frac{1}{\boxed{-10}} + \frac{\boxed{4}}{5}$

•  $\frac{1}{\boxed{-2}} + \frac{\boxed{6}}{5}$

**Do not accept use of non-integers, eg:**

•  $\frac{1}{\boxed{3.33...}} + \frac{\boxed{2}}{5}$

- (b) Gives a **different** pair of numbers to make the calculation correct

1

1

[2]

**Q10.**

(a)  $6\frac{1}{4}$

*Accept equivalent fractions.*

**Do not accept**  $5\frac{5}{4}$

1

(b)  $1\frac{1}{2}$

*Accept equivalent fractions, eg*

$1\frac{2}{4}$ ,  $\frac{3}{2}$ , 1.5, 150%

1

[2]