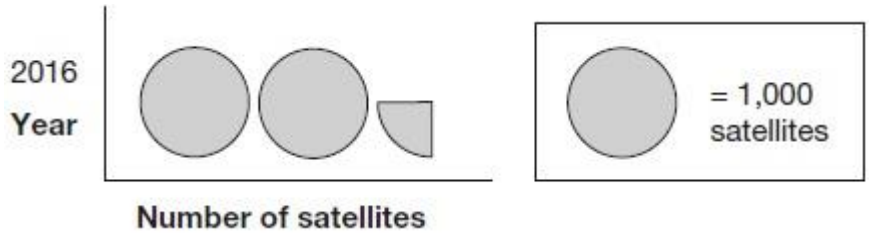
Q1.

This pictogram shows the number of satellites above the Earth in 2016.

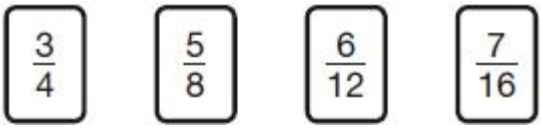


How many satellites were above the Earth in 2016?

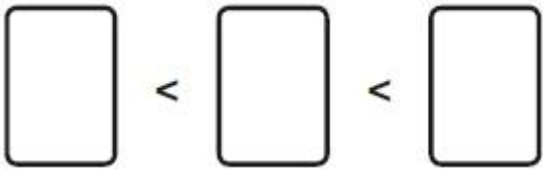
1 mark

Q2.

Here are four fraction cards.

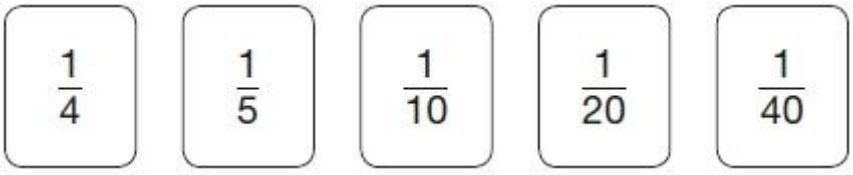


Use any **three** of the cards to make this correct.



1 mark

Q3.



Use three of these fraction cards to complete the sum below.

$\square + \square + \square = \frac{1}{2}$

1 mark

Q4.

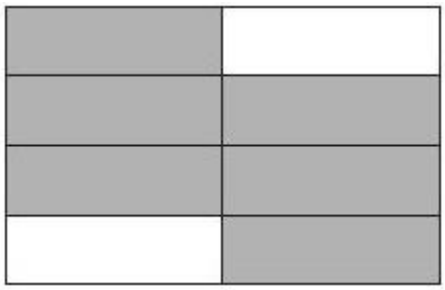
Write the missing fraction.

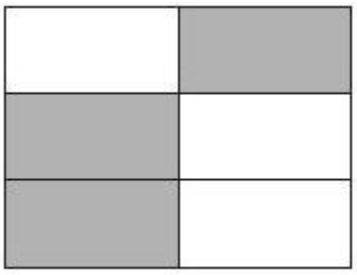
$\frac{1}{3} + \frac{1}{4} + \square = 1$

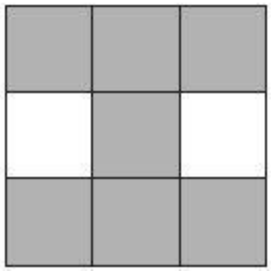
1 mark

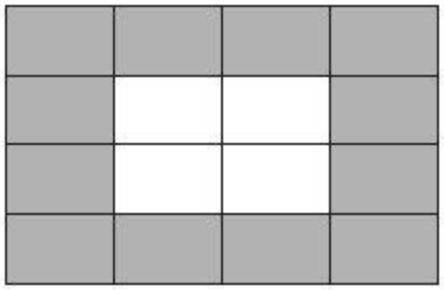
Q5.

Tick two shapes that have $\frac{3}{4}$ shaded.









1 mark

Q6.

Layla wants to estimate the answer to this calculation.

$$3\frac{9}{10} - 2\frac{1}{8} + 1\frac{4}{5}$$

Tick the calculation below that is the best estimate.

Tick **one**

3 − 2 + 2	☐
4 − 2 + 1	☐
4 − 2 + 2	☐
3 − 2 + 1	☐

1 mark

Q7.

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

$\frac{2}{3}$ 0.5 $\frac{3}{5}$ 0.65

☐ ☐ ☐ ☐

smallest

1 mark

Q8.

$\frac{6}{5}$ $\frac{3}{5}$ $\frac{3}{4}$

Write these fractions in order, starting with the **smallest**.

☐ ☐ ☐

smallest

1 mark

Q9.

The length of a day on Earth is 24 hours.

The length of a day on Mercury is $58\frac{2}{3}$ times the length of a day on Earth.

What is the length of a day on Mercury, in **hours**?

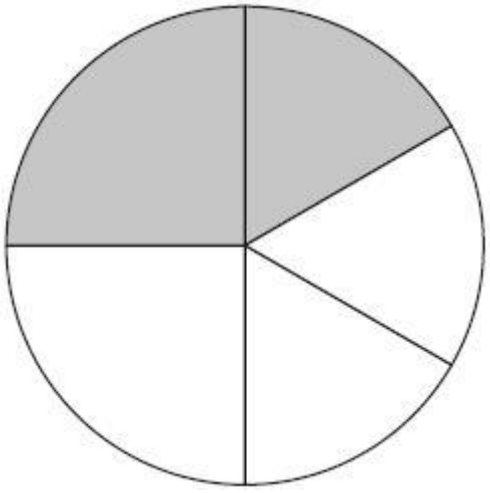
Show your method

hours

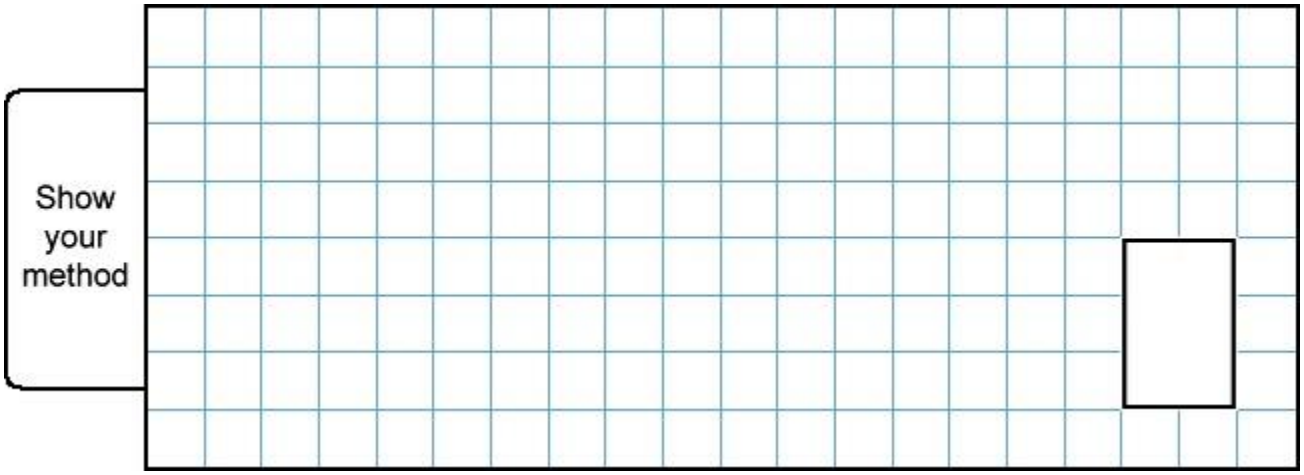
2 marks

Q10.

In this circle, $\frac{1}{4}$ and $\frac{1}{6}$ are shaded.



What fraction of the whole circle is **not** shaded?



2 marks

Q11.

Circle the improper fraction that is equivalent to $6\frac{7}{8}$

$\frac{67}{8}$ $\frac{48}{8}$ $\frac{62}{8}$ $\frac{55}{8}$ $\frac{76}{8}$

1 mark

Q12.

Tick the fractions **less than** $\frac{5}{8}$

$\frac{1}{2}$ ☐

$\frac{2}{8}$ ☐

$\frac{3}{4}$ ☐

$\frac{7}{16}$ ☐

$\frac{24}{32}$ ☐

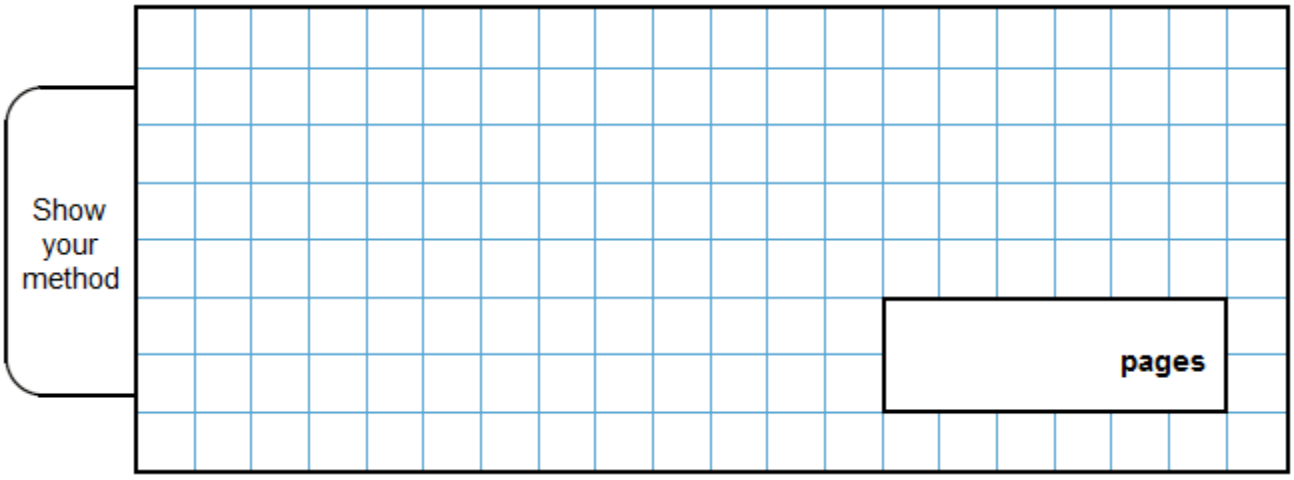
2 marks

Q13.

A book has 276 pages.

Amina has read $\frac{1}{3}$ of the book.

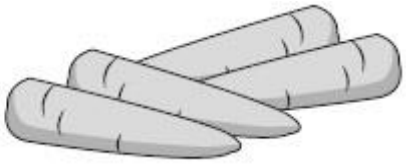
How many pages are **left** for Amina to read?



2 marks

Q14.

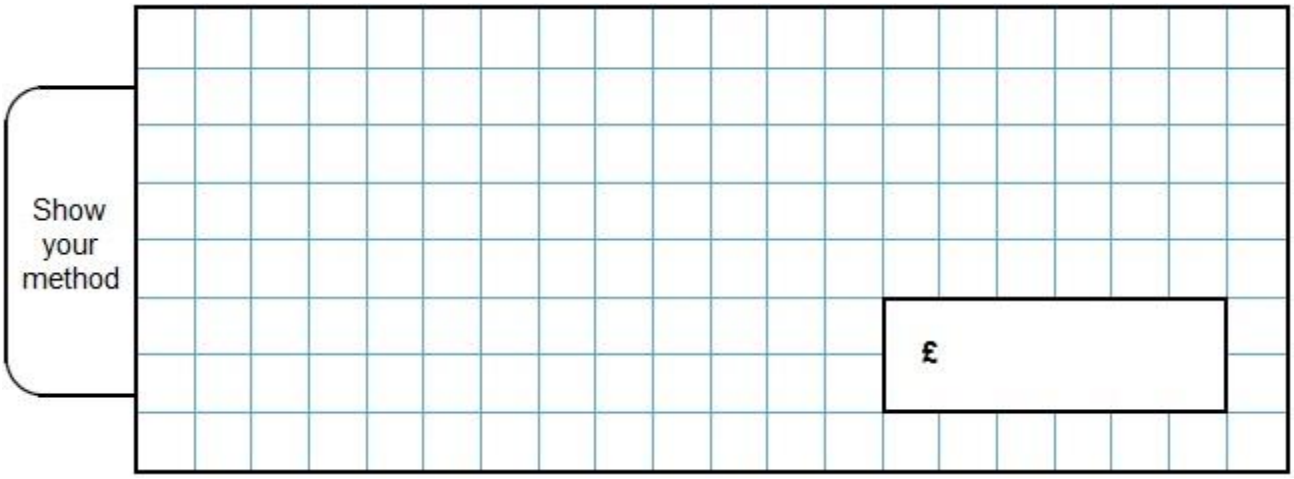
potatoes
£1.50 per kg



carrots
£1.80 per kg

Jack buys $1\frac{1}{2}$ kg of potatoes and $\frac{1}{2}$ kg of carrots.

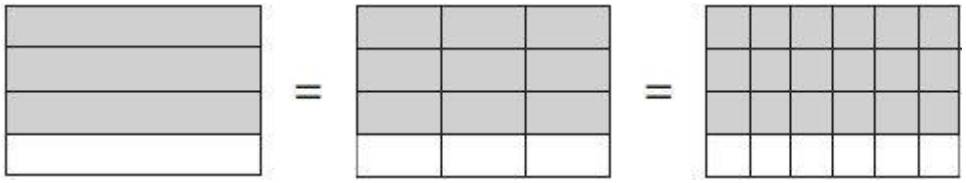
How much **change** does he get from **£5**?



2 marks

Q15.

These diagrams show three equivalent fractions.



Write the missing values.

$$\frac{3}{4} = \frac{9}{\square} = \frac{\square}{24}$$

1 mark

Mark schemes

Q1.

2,250

Do not *accept* $2000\frac{1}{4}$ ***OR*** $2\frac{1}{4}$ ***OR*** *2.25*

[1]

Q2.

Award **ONE** mark for any of the following:

$\frac{7}{16} < \frac{6}{12} < \frac{5}{8}$

OR

$\frac{7}{16} < \frac{6}{12} < \frac{3}{4}$

OR

$\frac{7}{16} < \frac{5}{8} < \frac{3}{4}$

OR

$\frac{6}{12} < \frac{5}{8} < \frac{3}{4}$

Accept equivalent fractions correctly ordered, e.g:

$\frac{21}{48} < \frac{24}{48} < \frac{30}{48}$

$\frac{21}{48} < \frac{24}{48} < \frac{36}{48}$

$\frac{7}{16} < \frac{10}{16} < \frac{12}{16}$

$\frac{12}{24} < \frac{15}{24} < \frac{18}{24}$

[1]

Q3.

Sum completed using the correct three cards, ie:

$\boxed{\frac{1}{4}} + \boxed{\frac{1}{5}} + \boxed{\frac{1}{20}} = \frac{1}{2}$

! The correct three fractions may be given in any order

Accept unambiguous indication, eg:

- *fractions joined to boxes*
- *use of correct equivalent fractions or decimals or percentages which must be linked to the original fraction cards*

[1]

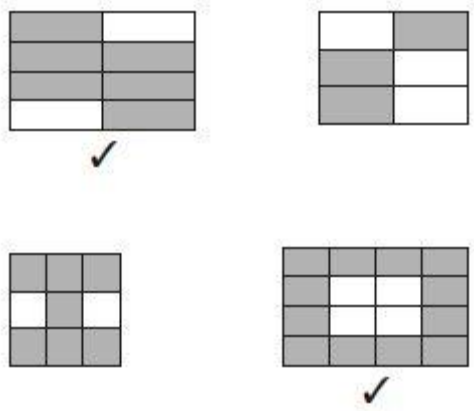
Q4.

$\frac{5}{12}$

[1]

Q5.

Both shapes ticked as shown:



Accept alternative unambiguous positive indications, e.g. shapes circled.

[1]

Q6.

Third box only ticked correctly, as shown:

3 − 2 + 2	
4 − 2 + 1	
4 − 2 + 2	✓
3 − 2 + 1	

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

[1]

Q7.

Numbers in order, as shown:

0.5 $\frac{3}{5}$ 0.65 $\frac{2}{3}$

Accept equivalent decimals, percentages or fractions.

[1]

Q8.

Fractions written in the correct order, as shown:

$\frac{3}{5}$ $\frac{3}{4}$ $\frac{6}{5}$

Accept the fraction joined to the correct box, rather than written in it.

***Do not** accept transcription errors or misreads for this question.*

[1]

Q9.

Award **TWO** marks for the correct answer of 1,408

OR

for an answer in the range of 1,406 to 1,409 inclusive.

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

- sight of 1,392

OR

- evidence of an appropriate method, e.g.
  - 24 × 58$\frac{2}{3}$ = answer

    Within an appropriate method, if a decimal equivalent for $\frac{2}{3}$ is given, it must be rounded or truncated to at least 2 decimal places.
  - 24 × 58 = 1,394 *(error)*
    $\frac{2}{3}$ of 24 = 16
    1,394 + 16 = answer
  - 24 × $\frac{176}{3}$ = answer
  - 24 × 58.67 = answer.

    *A final answer is required for the award of **ONE** mark.*

Up to 2m

[2]

Q10.

Award **TWO** marks for the correct answer of $\frac{7}{12}$

*Accept equivalent fractions or an **exact** decimal equivalent, e.g.* $0.53\dot{8}$

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

- $\frac{1}{4}+\frac{1}{6}=$

  $\frac{3}{12}+\frac{2}{12}=\frac{5}{12}$

  $1-\frac{5}{12}$

OR

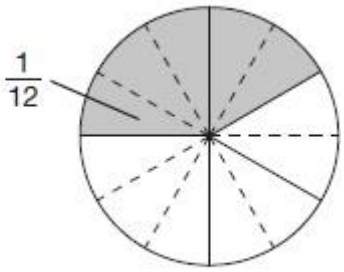
- $\frac{1}{4}+\frac{1}{6}+\frac{1}{6}$

OR

- $1-\frac{1}{4}-\frac{1}{6}$

OR

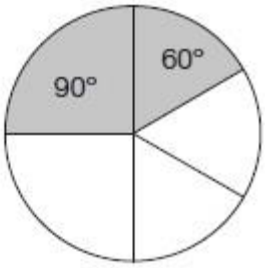
-



  $\frac{3}{12}+\frac{4}{12}$

OR

•



$90° + 60° = 150°$

$1 - \frac{150}{360}$

*Accept for **ONE** mark an answer between 0.58 and 0.59 inclusive.*

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

Up to 2m

[2]

Q11.

Correct number circled, as shown:

$\frac{67}{8}$ $\frac{48}{8}$ $\frac{62}{8}$ $\frac{55}{8}$ $\frac{76}{8}$

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

[1]

Q12.

Award **TWO** marks for three boxes ticked correctly, as shown:

$\frac{1}{2}$	✓
$\frac{2}{8}$	✓
$\frac{3}{4}$	
$\frac{7}{16}$	✓
$\frac{24}{32}$	

Award **ONE** mark for:

- only two boxes ticked correctly and no incorrect boxes ticked

OR

- three boxes ticked correctly and one incorrect box ticked.

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

Up to 2m

[2]

Q13.

Award **TWO** marks for the correct answer of 184

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

- sight of 92

OR

- evidence of appropriate method, e.g.
  - $\frac{1}{3}$ × 276 = 92
    92 × 2 =
  - 276 ÷ 3 = 92
    276 – 92 =

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

Up to 2 marks

[2]

Q14.

Award **TWO** marks for the correct answer of £1.85

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

- $1\frac{1}{2}$ × £1.50 = £2.25
  $\frac{1}{2}$ of £1.80 = 70p (error)
  £2.25 + 70p = £2.95
  £5 − £2.95 =

OR

- £1.50 + 75 = £2.25
  £2.25 + 90 = 415p (error)
  £5.00 − 415p =

OR

- sight of £3.15 **OR** 315p as evidence of evaluating the correct cost of the potatoes and carrots.

***Do not** accept misreads for this question.*

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

*Accept for **ONE** mark an answer of £185 or £185p as evidence of an appropriate method.*

Up to 2 marks

[2]

Q15.

Both values correct, as shown:

$$\frac{3}{4} = \frac{9}{\boxed{12}} = \frac{\boxed{18}}{24}$$

*Both values must be correct for the award of **ONE** mark.*

[1]