



GCSE Foundation

Number



51 minutes



49 marks

Equivalence

- Q1.** Oscar and Erik want to find out who can solve puzzles faster.
They each solve five puzzles.

Here are Oscar's times in seconds.

10.03 9.78 10.61 12.90 10.08

Erik has a mean time of 10.31 seconds.

- (a) Who has the lower mean time?
You **must** show your working.

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(3)

- (b) They decide **not** to use their slowest and fastest times.
The winner is the one with the lower mean of the other three times.

Erik's new mean is 0.34 seconds more than before.

Who wins?
You **must** show your working.

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(2)

(Total 5 marks)

- Q2.** In each part, circle the odd one out.

Give a reason for your answer.

- (a) 75% $\frac{3}{4}$ 0.75 7.5

Reason

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(1)

(b) $\frac{2}{6}$ $\frac{4}{10}$ $\frac{6}{18}$ $\frac{8}{24}$

Reason

(1)

(c) $\sqrt{64}$ $\sqrt{81}$ $\sqrt{125}$ $\sqrt{144}$

Reason

(1)

(d) 11 13 15 17

Reason

(1)

(Total 4 marks)

Q3. Which is bigger, 0.38 or $\frac{3}{8}$?

You **must** show your working.

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Answer

(Total 3 marks)

Q4. (a) Write the number one hundred thousand as a power of 10.

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Answer

(1)

- (b) Work out the value of $\frac{2^3 \times 5^2}{10}$

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Answer

(3)

(Total 4 marks)

- Q5.** (a) Write 80% as a decimal.

Answer

(1)

- (b) Write 0.7 as a fraction.

Answer

(1)

- (c) Write $\frac{3}{4}$ as a decimal.

Answer

(1)

- (d) Write 80%, 0.7 and $\frac{3}{4}$ in order with the smallest first.

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Answer , ,

(1)

(Total 4 marks)

- Q6.** (a) (i) Write $\frac{1}{4}$ as a percentage.

Answer %

(1)

- (ii) Write 30% as a decimal.

Answer

(1)

(iii) Write $\frac{1}{4}$, 30% and 0.2 in order with the smallest first.

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Answer

(1)

(b) Complete the following.

(i) $\frac{2}{3} = \frac{\boxed{}}{18}$

(1)

(ii) $\frac{\boxed{}}{4} = \frac{15}{20}$

(1)

(c) Work out $\frac{3}{8}$ as a decimal.

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Answer

(2)

(Total 7 marks)

Q7. (a) Complete the table.

| Fraction | Decimal | Percentage |
|----------------|---------|------------|
| $\frac{3}{4}$ | | 75% |
| $\frac{9}{10}$ | 0.9 | |
| | 0.3 | 30% |

(3)

- (b) Write $\frac{3}{4}$, 0.9 and 30% in order with the smallest first.

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Answer,,

(1)

(Total 4 marks)

- Q8.** What fraction is half way between $\frac{1}{4}$ and $\frac{1}{8}$?

Give your answer as a fraction in its simplest form.

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Answer

(Total 3 marks)

- Q9.** (a) Write 0.8 as a fraction.
Give your answer in its simplest form.

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Answer

(2)

- (b) (i) Work out $\frac{3}{10}$ of 270.

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Answer

(2)

- (ii) Kaye has 270 magazines.
She sells 30% of them.

How many magazines does she have left?

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Answer

(2)
(Total 6 marks)

- Q10.** Write 65%, 0.7 and $\frac{16}{25}$ in order of size starting with the smallest.

You **must** show your working.

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Answer

(Total 3 marks)

- Q11.** The table shows Ann's marks in two tests.

| Test | Mark |
|------|---------------|
| 1 | 60 out of 80 |
| 2 | 70 out of 100 |

In which test did Ann do better?
You **must** show your working.

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Answer

(Total 3 marks)

Q12. The price of a roll of film is reduced from £4 to £3.50

Calculate the reduction as a percentage of the original price.

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Answer %

(Total 3 marks)

