

1 Multiplying decimals

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- a) Work out 0.09×0.4
b) Apples cost £2.35 per kg. Work out the cost of 3.6 kg of apples.

a) $9 \times 4 = 36$, so 0.036
b) $235 \times 36 = 8460$
b) £8.46

2 Dividing decimals

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- a) Work out $0.432 \div 0.06$
b) A pipe 4.5 m long is cut into pieces 0.18 m long. How many pieces are there?

a) $43.2 \div 6 = 7.2$
b) $450 \div 18$
b) 25 pieces

3 Rounding to decimal places

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- a) Round 14.6973 to 2 decimal places.
b) Write down a number with 3 decimal places that is bigger than 2.4 and rounds to 2.40 to 2 decimal places.

a) 14.70
b) 2.401, 2.402, 2.403 or 2.404

4 Significant figures

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- a) Round 395 210 to 2 significant figures.
b) Jo rounds 0.07951 to 2 significant figures. She writes 0.08. What is wrong?

a) 400 000
b) the zero is a significant figure: 0.080

5 Estimation

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- a) Estimate the value of $\frac{5.82 \times 38.6}{0.512}$
b) Is your estimate bigger or smaller than the exact answer?
Explain how you know.

a) $\frac{6 \times 40}{0.5} = \frac{240}{0.5} = 480$
b) Top rounded up, bottom rounded down
b) bigger

Decimals and estimation

revision mat answers

Higher A

6 Error intervals

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- a) A mass, m grams, is 2600 g to the nearest 100 g. Write the error interval for m .
b) A number, x , is truncated to 2 decimal places. The result is 5.07. Write the error interval for x .

a) $2550 \leq m < 2650$
b) $5.07 \leq x < 5.08$

7 Limits of accuracy

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- a) A race is 400 m long to the nearest 5 m. Write down its two bounds.
b) A fence panel is 1.8 m wide to the nearest 10 cm. What is the shortest a row of 12 panels could be?

a) 397.5 m and 402.5 m
b) 1.8 m to the nearest 0.1 m: 1.75 m
b) $12 \times 1.75 = 21$ m

8 Bounds in calculations

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- a) A 2.4 m board (to the nearest 0.1 m) has an 85 cm piece (to the nearest cm) cut off. Find the least length left.
b) Ali cycles 60 km (to the nearest 10 km) in 2.5 hours (to the nearest half hour). Find the lower bound of his average speed.

a) $2.35 - 0.855 = 1.495$ m
b) $55 \div 2.75 = 20$ km/h

9 Fractions and decimals

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- a) Write in order, smallest first.
 0.4 $\frac{3}{8}$ 37% $\frac{11}{30}$
b) Explain why $\frac{7}{40}$ is a terminating decimal. Then write it as a decimal.

a) $\frac{11}{30}$, 37%, $\frac{3}{8}$, 0.4
b) $40 = 2^3 \times 5$, no other primes
b) 0.175

10 Recurring decimals

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- a) Write $0.\dot{6}\dot{3}$ as a fraction in its simplest form.
b) Use algebra to write $0.41\dot{6}$ as a fraction in its simplest form.

a) $\frac{63}{99} = \frac{7}{11}$
b) $1000x - 100x = 416.6... - 41.6...$
b) $900x = 375$, $x = \frac{5}{12}$