

KS3 – Estimation & Rounding

Section A – Estimation

Q1 (3 marks)

Estimate each calculation by rounding each number to 1 significant figure.

a) 48×21

b) $196 \div 4.1$

c) $31.2 + 68.7$

Q2 (3 marks)

Estimate each calculation by rounding each number to 1 significant figure.

a) 79×0.51

b) $598 \div 19.7$

c) 4.83×6.12

Q3 (3 marks)

Estimate each calculation by rounding each number to 1 significant figure.

a) $(39 \times 21) \div 8.2$

b) $(61 + 38) \times 4.9$

c) $(298 - 103) \div 9.8$

Q4 (2 marks)

A cinema sells 198 tickets at £7.90 each.

Estimate the total amount of money taken from ticket sales.

Q5 (2 marks)

A car travels 347 miles using 41 litres of fuel.

Estimate the number of miles travelled per litre.

Challenge

Q6 (3 marks)

Without working out the exact answer, decide whether each statement is reasonable.
Use estimation to justify your answer.

a) $49.8 \times 19.6 = 976.08$

b) $603 \div 14.9 = 4.05$

c) $8.12 \times 31.4 = 255.0$

Section B – Significant Figures

Q7 (4 marks)

Round each number to 1 significant figure.

a) 47

b) 682

c) 5.73

d) 0.0846

Q8 (4 marks)

Round each number to 2 significant figures.

a) 583

b) 7,846

c) 6.375

d) 0.04782

Q9 (4 marks)

Round each number to 3 significant figures.

a) 4,762

b) 85.649

c) 0.006378

d) 12.995

Q10 (3 marks)

Round each number to the number of significant figures stated.

a) 38,471 to 2 significant figures

b) 0.009564 to 2 significant figures

c) 726.48 to 4 significant figures

Q11 (2 marks)

A population is recorded as 487,362.

a) Round the population to 2 significant figures.

b) Round the population to 3 significant figures.

Challenge

Q12 (2 marks)

A calculator displays 0.004996.

Round this number to 2 significant figures.

Section C – Error Intervals

Q13 (2 marks)

A length is given as 8 cm correct to the nearest centimetre.

Write down the lower bound and upper bound for the length.

Q14 (2 marks)

A mass is given as 24.6 kg correct to the nearest 0.1 kg.

Write down the lower bound and upper bound for the mass.

Q15 (2 marks)

A distance is given as 350 m correct to the nearest 10 m.

Write down the error interval for the distance.

Q16 (3 marks)

Write down the error interval for each measurement.

a) 7.2 cm correct to the nearest 0.1 cm

b) 480 g correct to the nearest 10 g

c) 3.45 litres correct to the nearest 0.01 litre

Q17 (3 marks)

A number, x , is 62 correct to the nearest whole number.

a) Write down the lower bound for x .

b) Write down the upper bound for x .

c) Complete the error interval: $\text{_____} \leq x < \text{_____}$

Q18 (2 marks)

A journey time is 35 minutes correct to the nearest 5 minutes.

Write down the error interval for the actual journey time.

Challenge

Q19 (3 marks)

A rectangular field has a length of 80 m correct to the nearest 10 m and a width of 50 m correct to the nearest 10 m.

a) Write down the lower bound for the length.

b) Write down the lower bound for the width.

c) Work out the smallest possible area of the field.

Q20 (3 marks)

A rectangle has a length of 12 cm correct to the nearest centimetre and a width of 8 cm correct to the nearest centimetre.

Work out the greatest possible area of the rectangle.

Total: ____ / 55

Percentage: ____%