FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

N14: Estimation

Solve problems using estimation and approximation

20 marks · 25 minutes · Non-calculator

1) Estimate the number of tiles 0.48 m wide needed to cover a length of 12.3 m.

.....

[Question 1: 2 marks]

2) Carpet costs £18.95 per m^2. Estimate the cost of carpet for a room 4.9 m by 6.2 m.

£ .....

[Question 2: 3 marks]

3) A car uses 7.8 litres of fuel per 100 km. Fuel costs £1.48 per litre. Estimate the cost of fuel for a 410 km trip.

£ .....

[Question 3: 3 marks]

4) Tickets cost £2.95 each. Use estimation to decide whether £50 is enough for 19 tickets.

.....

[Question 4: 3 marks]

5) Estimate the value of $\sqrt{65} \times 3.9$

.....

[Question 5: 2 marks]

6) Estimate how long it takes to drive 297 km at an average speed of 62 km/h.

..... hours

[Question 6: 2 marks]

7) Estimate the number of seconds in a year. Give your answer in standard form to 1 significant figure.

.....

[Question 7: 3 marks]

8) Estimate the mean of 48.7, 51.2, 49.9 and 50.4

.....

[Question 8: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	About 25	12 ÷ 0.5 = 24 or 12.3 ÷ 0.5 (P1); 24 or 25 (A1).
2	About £600	5 × 6 = 30 (P1); ×20 (P1); A1.
3	About £48	8 × 4 = 32 litres (P1); ×1.5 (P1); A1.
4	No	19 × 3 = 57 (P1); exact cost is close to this as 2.95 is close to 3 (P1); not enough (C1).
5	About 32	8 × 4 (P1); A1.
6	About 5	300 ÷ 60 (P1); A1.
7	3×10^7	365 × 24 × 3600 (P1); rounded values (P1); A1.
8	About 50	All values near 50 (P1); A1.