FOUNDATION & HIGHER

SAME AT BOTH TIERS

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

N14: Estimation

Estimate answers and check calculations by approximation

20 marks · 25 minutes · Non-calculator

1) Estimate the value of 4.87×21.3

.....

[Question 1: 2 marks]

2) Estimate the value of $\dfrac{38.7 \times 9.6}{0.48}$

.....

[Question 2: 3 marks]

3) Estimate the value of $\sqrt{99.2} \times 3.05$

.....

[Question 3: 2 marks]

4) Estimate the value of $612 \div 19.8$

.....

[Question 4: 2 marks]

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5) Jon says $31.2 \times 0.98 = 305.76$. Use an estimate to show that Jon is wrong.

[Question 5: 2 marks]

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6) Pens cost £2.95 each. Ruby buys 48 pens.

(a) Estimate the total cost.

£ .....

(2)

(b) Is your estimate more or less than the exact cost? Give a reason.

.....

(1)

[Question 6: 3 marks]

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7) Estimate the value of $\dfrac{6.12^2}{2.97}$

.....

[Question 7: 2 marks]

8) A circle has radius 9.8 cm. Using $\pi \approx 3$, estimate its area.

..... cm^2

[Question 8: 2 marks]

9) Estimate the value of 0.512×789

.....

[Question 9: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	100	5×20 (M1); A1.
2	800	Rounding to $\frac{40 \times 10}{0.5}$ (M2, M1 for two correct roundings); A1.
3	30	10×3 (M1); A1.
4	30	$600 \div 20$ (M1); A1.
5	about 30	$30 \times 1 = 30$ (M1); so 305.76 is about 10 times too big (A1).
6	(a) £150 (b) more	(a) 50×3 (M1); A1. (b) Both numbers were rounded up (B1).
7	12	$\frac{6^2}{3}$ (M1); A1.
8	300	3×10^2 (M1); A1.
9	400	0.5×800 (M1); A1.