

Rounding & Estimating: Hard Practice Paper 3 Answers

Q#	Answer	Explanation
1	C	The first two significant figures are 3 and 0. The next digit is 5 (≥ 5), so we round up the 0 to 1. $3,050,000 \rightarrow 3,100,000$.
2	C	When a measurement rounds to 12.6 kg (to the nearest 0.1 kg), the actual weight lies in the range 12.55 kg to 12.65 kg. The smallest possible value is 12.55 kg; anything below 12.55 would round to 12.5 kg.
3	A	The first three significant figures are 7, 0, and 0. The next digit is 4 (< 5), so we round down. $7.0049 \rightarrow 7.00$ (keeping the zeros to show 3 significant figures).
4	B	598 rounds to 600 (2 s.f.) and 403 rounds to 400 (2 s.f.). $600 \times 400 = 240,000$. (The exact answer is 240,994.)
5	B	The first two significant figures are 3 and 5. The next digit is 0 (< 5), so we round down. $0.003506 \rightarrow 0.0035$.
6	D	0.481 rounds to 0.5 (1 s.f.) and 0.052 rounds to 0.05 (1 s.f.). $0.5 \div 0.05 = 10$. (The exact answer is approximately 9.25.)
7	D	The first three significant figures are 2, 4, and 9. The next digit is 5 (≥ 5), so we round up. Rounding 9 gives 10, which carries over: 24,9__ becomes 25,000.
8	B	£2.47 rounds to £2 (1 s.f.) and 38 rounds to 40 (1 s.f.). $\text{£}2 \times 40 = \text{£}80$. (The exact cost is £93.86.)
9	C	The first four significant figures are 1, 0, 0, and 0. The next digit is 5 (≥ 5), so we round up the 4th significant figure from 0 to 1. $1,000,500 \rightarrow 1,001,000$.
10	C	For a number to round to 80,000 (nearest 10,000), it must be less than 85,000. The largest whole number less than 85,000 is 84,999. (85,000 would round up to 90,000.)

11	C	The first three significant figures are 1, 9, and 9. The next digit is 5 (≥ 5), so we round up. Rounding up the second 9 gives 10, which carries through: 0.199__ becomes 0.200.
12	D	80 is very close to 81, and $\sqrt{81} = 9$. So $\sqrt{80} \approx 9$. (The exact value is approximately 8.944.)
13	D	The first three significant figures are 5, 5, and 5. The next digit is 5 (≥ 5), so we round up the third 5 to 6. 555,555 $\rightarrow$ 556,000.
14	E	Numbers that round to 5.0 must be from 4.95 up to (but not including) 5.05. At 5.05, the 2nd decimal digit is 5 (≥ 5), so it rounds up to 5.1, not 5.0.
15	B	786 rounds to 800 (1 s.f.) and 38 rounds to 40 (1 s.f.). $800 \div 40 = 20$. (The exact answer is approximately 20.68.)