

Rounding & Estimating: Hard Practice Paper 1 Answers

Q#	Answer	Explanation
1	C	The first significant figure is 8 and the second is 4. The next digit is 7, which is 5 or more, so we round up. $0.00847 \rightarrow 0.0085$.
2	B	The first three significant figures are 4, 7, and 3. The next digit is 2, which is less than 5, so we round down. $4,732,500 \rightarrow 4,730,000$.
3	D	For a number to round up to 3,400, its tens digit must be 5 or more. The smallest such value is 3,350, because its tens digit is 5 (≥ 5), so it rounds up to 3,400. 3,349 has tens digit 4, which rounds down to 3,300.
4	D	The first two significant figures are 9 and 9. The next digit is 9 (≥ 5), so we round up the second 9. That gives 10, which carries over: 0.99 rounds up to 1.0.
5	C	3,847 rounds to 4,000 (1 s.f.) and 19 rounds to 20 (1 s.f.). $4,000 \div 20 = 200$. (The exact answer is approximately 202.5.)
6	E	Numbers that round to 6.40 (3 s.f.) must be between 6.395 and less than 6.405. At 6.405, the digit after the 3rd significant figure is 5 (≥ 5), so it rounds up to 6.41, not 6.40.
7	B	Leading zeros are not significant. The first three significant figures are 5, 0, and 7. The next digit is 0 (< 5), so we round down. $0.050702 \rightarrow 0.0507$.
8	D	The first two significant figures are 2 and 3. The next digit is 6 (≥ 5), so we round up the 3 to 4. $23,648 \rightarrow 24,000$.
9	D	63 is very close to 64, and $\sqrt{64} = 8$. So $\sqrt{63} \approx 8$. (The exact value is approximately 7.937.)
10	C	To round to 3 decimal places, look at the 4th decimal digit (9). Since $9 \geq 5$, we round up the 3rd decimal digit from 4 to 5. $1.0049 \rightarrow 1.005$.

11	C	For a number to round to 5,800 (2 s.f.), it must be less than 5,850. The largest whole number less than 5,850 is 5,849. (5,850 would round up to 5,900.)
12	D	The first two significant figures are 2 and 4. The next digit is 7 (≥ 5), so we round up the 4 to 5. $247.3 \rightarrow 250$.
13	B	897 rounds to 900 (1 s.f.) and 302 rounds to 300 (1 s.f.). $900 \times 300 = 270,000$. (The exact answer is 270,894.)
14	B	The first three significant figures are 6, 3, and 8. The next digit is 1 (< 5), so we round down. $6,381 \rightarrow 6,380$.
15	D	19.7 rounds to 20, 31.2 rounds to 30, and 48.6 rounds to 50. $20 + 30 + 50 = 100$. (The exact total is 99.5.)