

Rounding & Estimating: Hard Practice Paper 2 Answers

Q#	Answer	Explanation
1	C	The first three significant figures are 8, 0, and 5. The next digit is 5 (≥ 5), so we round up the third figure from 5 to 6. $0.8055 \rightarrow 0.806$.
2	D	48.3 rounds to 50 (nearest 10). $50^2 = 50 \times 50 = 2,500$. (The exact value of 48.3^2 is 2,332.89.)
3	C	For a number to round up to 7,000, its hundreds digit must be 5 or more. The smallest such value is 6,500, because its hundreds digit is 5 (≥ 5), so it rounds up to 7,000. 6,499 has hundreds digit 4, which rounds down to 6,000.
4	A	The first three significant figures are 1, 0, and 0. The next digit is 4 (< 5), so we round down. $100,450 \rightarrow 100,000$.
5	D	4.87 rounds to 5 and 9.92 rounds to 10. $5 \times 10 = 50$. (The exact answer is approximately 48.31.)
6	E	Numbers that round to 0.0081 (2 s.f.) must be between 0.00805 and less than 0.00815. At 0.00815, the digit after the 2nd significant figure is 5 (≥ 5), so it rounds up to 0.0082, not 0.0081.
7	D	The first three significant figures are 9, 9, and 6. The next digit is 5 (≥ 5), so we round up the 6 to 7. $9,965 \rightarrow 9,970$.
8	D	67.4 rounds to 70 (1 s.f.) and 2.8 rounds to 3 (1 s.f.). $70 \times 3 = 210$ miles. (The exact distance is approximately 188.7 miles.)
9	D	The first significant figure is 3. The next digit is 9 (≥ 5), so we round up 3 to 4. $0.03951 \rightarrow 0.04$.
10	D	When a measurement is rounded to the nearest 0.1 m and gives 8.4 m, the actual length lies in the range 8.35 m to 8.45 m. The upper bound is 8.45 m; any value at or above 8.45 m would round to 8.5 m.
11	D	The first three significant figures are 5, 0, and 0. The next digit is 5 (≥ 5), so we round up the third significant figure from 0 to 1. $5.005 \rightarrow 5.01$.

12	D	9.97 rounds to 10 and 10.03 rounds to 10. $10 \times 10 = 100$. (The exact answer is approximately 99.999.)
13	D	4,821 rounds to 5,000; 3,176 rounds to 3,000; 2,954 rounds to 3,000. $5,000 + 3,000 + 3,000 = 11,000$. (The exact total is 10,951.)
14	D	The first three significant figures are 9, 9, and 7. The next digit is 5 (≥ 5), so we round up the 7 to 8. $0.099750 \rightarrow 0.0998$.
15	D	The first two significant figures are 9 and 8. The next digit is 7 (≥ 5), so we round up the 8 to 9. $9.87 \rightarrow 9.9$ seconds.

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