

Rounding & Estimating: Hard Practice Paper 4 Answers

Q#	Answer	Explanation
1	D	The first two significant figures are 7 and 3. The next digit is 5 (≥ 5), so we round up the 3 to 4. $0.007352 \rightarrow 0.0074$.
2	C	0.0613 rounds to 0.06 (1 s.f.) and 0.0481 rounds to 0.05 (1 s.f.). $0.06 \times 0.05 = 0.003$. (The exact answer is approximately 0.00295 .)
3	C	Numbers that round to 0.047 (2 s.f.) must be from 0.0465 up to (but not including) 0.0475 . The upper bound is 0.0475 ; any value at or above 0.0475 would round up to 0.048 .
4	D	The first three significant figures are 2, 9, and 9. The next digit is 5 (≥ 5), so we round up. Rounding up the second 9 gives 10, and this carry continues all the way through: $29,9__$ becomes $30,000$.
5	D	5.8 rounds to 6 and $\pounds 4.95$ rounds to $\pounds 5$. $6 \times \pounds 5 = \pounds 30$. (The exact cost is $\pounds 28.71$.)
6	C	The first four significant figures are 1, 2, 3, and 4. The next digit is 5 (≥ 5), so we round up the 4 to 5. $1,234,567 \rightarrow 1,235,000$.
7	E	Numbers that round to 4.50 (3 s.f.) must be from 4.495 up to (but not including) 4.505 . At 4.505 , the digit after the 3rd significant figure is 5 (≥ 5), so it rounds up to 4.51 , not 4.50 .
8	A	6.28 to 1 significant figure: the first significant figure is 6, and the next digit is 2 (< 5), so we round down. $6.28 \rightarrow 6$. The time is 4 minutes and 6 seconds.
9	A	The first two significant figures are 5 and 0. The next digit is 0 (< 5), so we round down. $500,500 \rightarrow 500,000$.
10	B	8.3 rounds to 10, 15.7 rounds to 20, 24.1 rounds to 20, and 42.9 rounds to 40. $10 + 20 + 20 + 40 = 90$. (The exact total is 91.0 .)
11	D	The first four significant figures are 3, 1, 4, and 1. The next digit is 5 (≥ 5), so we round up the 1 to 2. $3.14159 \rightarrow 3.142$.

12	B	94.6 rounds to 90 m (nearest 10) and 38.2 rounds to 40 m (nearest 10). $90 \times 40 = 3,600 \text{ m}^2$. (The exact area is approximately $3,613.72 \text{ m}^2$.)
13	C	The first significant figure is 9. The next digit is 9 (≥ 5), so we round up. Rounding 9 up gives 10, which carries over: $0.000999 \rightarrow 0.001$.
14	C	0.065 has first significant figure 6, and the next digit is 5 (≥ 5), so it rounds up to 0.07. The others round to 0.06 (0.063, 0.064) or 0.08 (0.075, 0.076).
15	B	34.5 rounds to 35 (nearest whole number) and 4.8 rounds to 5. $35 \div 5 = 7$. (The exact answer is approximately 7.19.)