| Question | Answer | Mark | Comments |
|---|---|---|---|
| 1 | $(\sqrt{97} =) \sqrt{100}$ or 10<br>or<br>$(2.014^3 =) 2^3$ or 8<br>or<br>$(0.49 =) 0.5$ or $\frac{1}{2}$ | M1 | |
| | $(\sqrt{97} =) \sqrt{100}$ or 10<br>and<br>$(2.014^3 =) 2^3$ or 8<br>and<br>$(0.49 =) 0.5$ or $\frac{1}{2}$ | M1 | $\frac{10+8}{0.5}$ or $\frac{18}{0.5}$ scores M2 |
| | 36 | A1 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 2(a) | 8 or 10 | M1 | 8 may be implied by $2^2$ or 4 |
| | 8 and 10<br>and<br>$\frac{1}{40}$ or 0.025 | A1 | 8 may be implied by $2^2$ or 4<br>accept 0.03 with $\frac{1}{40}$ or 0.025 seen |
| | **Additional Guidance** | | |
| | Do not allow exact calculations for M1A1<br>eg $4.113 = 4$ and $10.21 = 10$ and $\frac{1}{40}$ | M1A0 | |
| | $\frac{1}{40}$ or 0.025 with 8 or 10 seen (8 may be implied by $2^2$ or 4) | M1A0 | |
| | $\frac{1}{40}$ or 0.025 without 8 or 10 seen (8 may be implied by $2^2$ or 4) | M0A0 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 2(b) | Valid explanation | B1 | eg both numbers have been rounded down |
| | **Additional Guidance** | | |
| | Ignore irrelevant reasons alongside a correct reason, unless contradictory | | |
| | Ignore a calculation using exact values alongside a correct reason<br>eg 0.025 is greater than 0.0238… and both numbers rounded down | B1 | |
| | 0.025 is greater than 0.0238… | B0 | |
| | The denominator is smaller | B1 | |
| | The denominator using the exact values is bigger | B1 | |
| | (Decimals) rounded down | B1 | |
| | Because 8.34 is more than 8 and 10.21 is more than 10 | B1 | |
| | One is divided by less (with answer more) | B1 | |
| | Estimating rounds the numbers down which makes the denominator less | B1 | |
| | Estimating rounds the numbers down which makes it less | B0 | |
| | Because it rounds up | B0 | |
| | Because she rounded each number to one significant figure | B0 | |
| | The numbers get rounded up so more than the exact value | B0 | |
| | Rounded up when estimating | B0 | |
| | Removing the decimals makes the number bigger | B0 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 3 (a) | $2^7$ or 128<br>or<br>$7^3$ or 343<br>or<br>$(5\times)\sqrt[3]{1\,000\,000}$ or $(5\times)\,100$<br>or 500 | M1 | |
| | At least two of 128, 343 and 500<br>or<br>471 | A1 | |
| | 471 and 500 | A1 | |