Standard Form Calculations and Combined Bounds

Year 10 · Number · y10-standard-form-bounds

Name: _____ Date: _____

Class: _____ Score: _____ / _____

Instructions
Answer every question in Practice. Try the Challenge section once Practice is complete. 10 questions in total.

Practice

1. Work out $(4 \times 10^{5}) \div (2 \times 10^{2})$, giving your answer in standard form.

2. A rectangle has length 8 cm and width 15 cm, each measured to the nearest cm. What are the lower and upper bounds of the length? Give as: lower, upper.

3. Work out $(5 \times 10^{6}) \times (3 \times 10^{-2})$, giving your answer in standard form.

4. Work out $(6 \times 10^{3}) \div (1.5 \times 10^{-2})$, giving your answer in standard form.

5. A car travels 120 miles (to the nearest mile) in 2 hours (to the nearest 0.1 hours). Give the upper bound of the distance and the lower bound of the time, as: distance, time.

6. When multiplying in standard form, multiply the coefficients and ADD the powers of 10. Work out $(2 \times 10^{4}) \times (4 \times 10^{3})$.

7. When dividing in standard form, divide the coefficients and SUBTRACT the powers of 10. Work out $(9 \times 10^{7}) \div (3 \times 10^{4})$.

8. For the maximum possible speed, use the UPPER bound of distance and the LOWER bound of time (speed = distance ÷ time). A journey is 100 km (to nearest km) in 2 hours (to nearest 0.1 hr). What upper distance bound and lower time bound should you use? Give as: distance bound, time bound.

Challenge

1. Work out $(2.4 \times 10^{8}) \div (6 \times 10^{-3})$, giving your answer in standard form.

2. A cube has sides measured as 5 cm to the nearest cm. Find the upper bound of its volume.

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