Indices and scientific notation - practice test 1

Name: _____ Date: _____

16 questions | 39 marks | 55 minutes

Build fluency with index laws, scientific notation and compatible units.

A scientific calculator may be used.

1. Evaluate 2^5. [1 mark]

2. Write $6^3 \times 6^2$ as one power. [1 mark]

3. Simplify $(4^2)^3 \div 4^4$. [2 marks]

4. Write 5^{-2} as a fraction. [2 marks]

5. Evaluate $(-2)^0 + (-2)^{-2}$. [3 marks]

6. Simplify $3x^2 \times 5x^4$. [2 marks]

7. Write $\frac{18a^3}{6a^5}$ with positive exponents, for $a \neq 0$. [2 marks]

8. Write 640000 in scientific notation. [2 marks]

9. Write 7.08×10^{-4} as an ordinary decimal. [2 marks]

10. Which is larger, 9.6×10^4 or 1.1×10^5? Explain. [2 marks]

11. Calculate $(3 \times 10^5)(8 \times 10^{-2})$ in scientific notation. [3 marks]

12. Calculate $\frac{4.8 \times 10^9}{1.2 \times 10^3}$. [3 marks]

13. Calculate $6.2 \times 10^5 + 9 \times 10^4$. [3 marks]

14. A microbe is 3×10^{-6} m long. A drawing is 6 cm long. Find the magnification. [4 marks]

15. A file contains 7.5×10^{8} bytes. A connection transfers 2.5×10^{6} bytes/s at a constant rate. Find the time in minutes. [4 marks]

16. A student writes $2^{3} + 2^{4} = 2^{7}$. Explain the error and calculate the correct value. [3 marks]