

2.3–2.4 QUIZ – EXPONENT LAWS

1. Write as **repeated multiplication**

a) $(-3)^2 \times (-4)^3 =$ _____

b) $3^4 \div 3^2 =$ _____

c) $(2^5)^3 =$ _____

d) $(3 \times 2)^2 =$ _____

e) $[(-4) \div 2]^3 =$ _____

2. Write as a **single power**. Show all calculations of exponents in your steps. Do not evaluate.

a) $2^4 \times 2^8 =$ _____ $\square \square$
= _____ $\square$

b) $(-3)^9 \div (-3)^2 =$ (_____) $\square \square$
= _____ $\square$

c) $(3^5)^3 =$ _____ $\square \square$
= _____ $\square$

d) $(2 \times 10)^3 =$ _____ $\square$

e) $[25 \div (-5)]^4 =$ _____ $\square$

3. Write as a **single power and then evaluate**. Show all calculations of exponents in your steps.

a) $4^4 \times 4^3 =$ _____ $\square \square$
= _____ $\square$
= _____

b) $(-2)^{19} \div (-2)^{13} =$ (_____) $\square \square$
= _____ $\square$
= _____

c) $(2^3)^4 =$ _____ $\square \square$
= _____ $\square$
= _____

d) $(5 \times 2)^7 =$ _____ $\square$
= _____

e) $[54 \div (-6)]^2 =$ _____ $\square$
= _____

4. Evaluate/ Write in standard form.

a) $10^5 =$ _____

b) $(4 \times 10^4) + (7 \times 10^3) + (3 \times 10^1) =$ _____

c) $10^9 =$ _____

d) $(1 \times 10^9) + (2 \times 10^6) + (3 \times 10^3) =$ _____

5. Write the following numbers using powers of 10.

a) $10\,000\,000 =$ _____

b) $-1\,000 =$ _____

c) $357\,468 =$ _____

d) $234\,050\,753 =$ _____

Name: _____

6. Evaluate using Exponent laws and **BEDMAS**. Show all calculations of exponents in your steps.

a) $(2)^7 \div (2)^5 - (2)^2$

$$\begin{array}{r} \square\square_ \\ \hline \square_ \\ \hline _ - _ \\ \hline \end{array}$$

b) $2^3 + 2^4 \times 2$

$$\begin{array}{r} _ + _ \square\square \\ \hline _ + _ \square \\ \hline _ + _ \\ \hline \end{array}$$

c) $(2^2 \times 5^2)^3 \times (8^0 + 2^0)^4$

$$\begin{array}{r} (\square\square \times \square\square) \times (_ + _) \\ (_ \times _) \times (_) \\ (_ \times _) \times _ \\ _ \times _ \\ \hline \end{array}$$

d) $[(-4)^3]^4 \div (2^2)^2$

$$\begin{array}{r} [(_) \square\square] \div \square\square \\ [(_) \square] \div \square \\ _ \div _ \\ \hline \end{array}$$

e) $\frac{(7^3 \div 7)^3}{(5 + 2)^4}$

$$= \frac{\square\square \div \square}{\square}$$

$$= \frac{\square \div \square}{\square}$$

$$= \frac{\square\square}{\square}$$

$$= \frac{\square}{\square}$$

$$= \square\square$$

$$= \square$$

$$= \underline{\hspace{2cm}}$$