Name:

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

$___^{\square\square} _ ___$

$___^{\square} _ ___$

$___ - ___$

$_____$

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

$___ + ___^{\square\square}$

$___ + ___^{\square}$

$___ + ___$

$_____$

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

$(___^{\square\square} \times ___^{\square\square}) \times (___ + __)$

$(___^{\square} \times ___^{\square}) \times (_____)$

$(____ \times ____) \times _____$

$_____ \times _____$

$_____$

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

$[(__)^{\square\square}] \div ___^{\square\square}$

$[(__)^{\square}] \div ___^{\square}$

$_____ \div _____$

$_____$

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

$= \dfrac{___^{\square\square} \div ___^{\square}}{___^{\square}}$

$= \dfrac{___^{\square} \div ___^{\square}}{___^{\square}}$

$= \dfrac{___^{\square\square}}{___^{\square}}$

$= \dfrac{___^{\square}}{___^{\square}}$

$= ___^{\square\square}$

$= ___^{\square}$

$= _____$