Name: _____

Unit 3 Exponents Check Up

1. Complete the table. (4 marks)

Power	Base	Exponent	Repeated Multiplication	Value
	5	4		
		4		16
			$6 \times 6 \times 6$	
$-(2)^3$				

2. Explain why $3^0 = 1$. *(Hint: there are two possible ways to explain this!!)* (2 marks)

3. Identify, then correct, any errors in the student work below. Explain how the errors may have occurred. (2 marks)

$$(-2)^4 - (-3)^3 \div (-9)^0 \times 2^3$$

$$16 - 27 \div (-1) \times 8$$

$$-11 \div (-1) \times 8$$

$$11 \times 8$$

$$88$$

4. Write each expression as a single power. You do NOT need to evaluate. (6 marks)

   a. $(2^5)^8$

   d. $\frac{14^8}{7^8}$

   b. $(5^3)(5^3)$

   e. $9^6 \div 9^4$

   c. $4^7 \cdot 3^7$

   f. $(-2)^4 \div (-2)^3$

5. Simplify to a single power and evaluate. (3 marks each)

a. $\dfrac{8 \cdot 8^5 \cdot 8^3}{(8^3)^2}$

b. $(3^4 \times 3^3)^2$

6. Evaluate each of the following. (3 marks each)

a. $7^2 + (-3)^3 \div (2^2 - 1)$

b. $2(4 - 7)^2 + 6^2$

7. Jenny was asked to write the expression $(7 \times 7 \times 7 \times 7 \times 7) \times (7 \times 7 \times 7)$ as a product of two powers, and then as a simplified power. Jenny's work is shown below. Did she make a mistake? If so, find and correct her error. (2 marks)

$(7 \times 7 \times 7 \times 7 \times 7) \times (7 \times 7 \times 7)$
$7^5 \times 7^3$
$7^{5 \times 3}$
7^{15}