

Names: _____ Period: _____

Math 9: Exponent Rules Quiz

Full credit will only be awarded for all work shown in a neat and organized manner.

1. Are the following expressions true or false? (Circle T or F)

If false, **explain** why and **correct** the answer

a) $\left(\frac{4}{5}\right)^3 = \frac{12}{15}$

T / F

b) $2^5 \times 2^5 = 2^{10}$

T / F

e) $(5^8)^2 = 5^{10}$

T / F

f) $(4^3 \times 5^2)^6 = 4^9 \times 5^8$

T / F

2. Simplify using exponent rules. Leave in **Exponential Form**

a) $5^3 \times 5^5$

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

c) $8^9 \div 8$

d) $\frac{7^4 \times 7^0}{7^2}$

e) $\frac{3^7 \times 2^8}{(-2)^2 \times (-3)^5}$

f) $4^{3a-2} \div 4^{a-5}$

g) $(8^5 \times 8^2)^3$

h) $\left(\frac{7^5}{9^2}\right)^2$

3. Simplify using exponent rules, then **Evaluate** (Answer with just a number)

a) $2^7 \div 2^0 - 2^2 \times 2^3$

b) $7^5 \div 7^3 \times 7$

c) $3^6 \div 3^3 + (3^2 - 3)^3$

d) $\frac{(-3)^3 + 3^4}{-3^2}$

e) $\left(\frac{5^6}{(-5)^5}\right)^3$

f) $-(4 + 2^3)^2$

4. Solve for a

a) $(2^a)^3 = 2^9$

b) $\frac{4^{a+6}}{4^{a+1}} = 4^{2a+1}$

$a =$ _____

$a =$ _____