Name: _____

Laws of Exponents

Write the following expressions using only positive exponents. Then calculate the result in two different ways using your calculator, once using the given expression and once using the expression with only positive exponents.

1) 3^{-5}

2) $(-2)^{-4}$

3) 7^{-1}

4) $\left(\dfrac{5}{4}\right)^{-1}$

5) $\left(\dfrac{1}{7}\right)^{-1}$

6) $\left(\dfrac{5}{4}\right)^{-3}$

7) $3^{-2} + 3^{-1}$

Let a and b stand for any numbers. Write the following expressions using only positive exponents.

1) a^{-4}

2) $(a+b)^{-2}$

3) $a^{-1} + b^{-1}$

Write the following expressions more concisely using negative exponents.

1) $\dfrac{1}{a^7}$

2) $\dfrac{a^2}{b^3}$

3) $\dfrac{1}{a} + \dfrac{1}{a^2}$

Let x be any number. Write the following expressions as one power of x.

1) $\left(x^{0.5}\right)^3$

2) $x^2 \sqrt[3]{x}$

3) $\left(\dfrac{1}{x^{0.25}}\right)^6$

4) $\dfrac{x^3 \sqrt{x}}{\sqrt[4]{x^3}}$

Grade 10