Are there any Homework Questions you would like to see on the board?

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) Evaluate numerical expressions involving integer exponents.
- b) Evaluate "zero" exponents.

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- 10. Write each power in simplified form.

 - a) 4^3 as a base 2 power d) $(-8)^4$ as a base -2 power

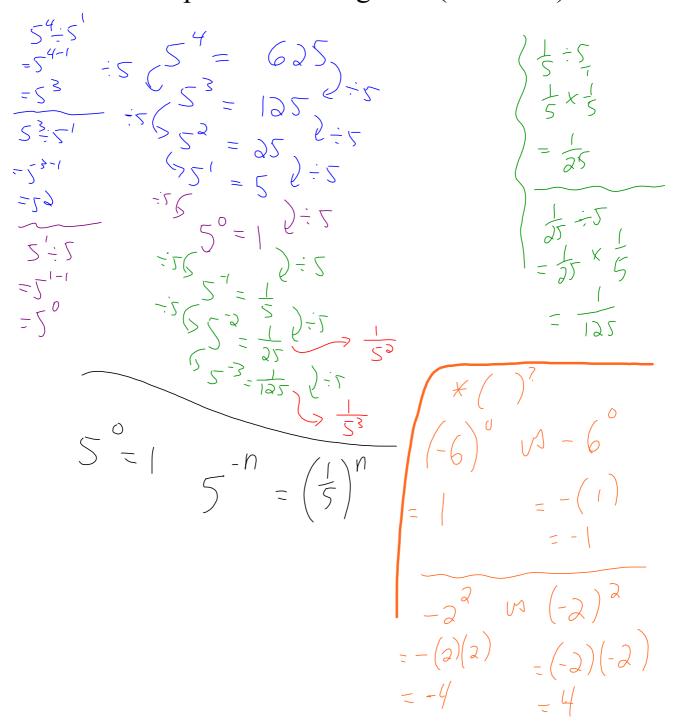
 - b) 95 as a base 3 power e) $\left(\frac{1}{4}\right)^3$ as a base $\frac{1}{2}$ power

 $3 \cdot 3 \cdot 3$ c 27^5 as a base 3 power f $\left(\frac{1}{25}\right)^4$ as a base $\frac{1}{5}$ power $= 3^3$ $= \left(3^3\right)^5$

$$= \left(\begin{pmatrix} 1 \\ 5 \end{pmatrix} \right)$$

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Develop Zero and Negative (see notes)



MCF 3MI

7.3 Working with Integer Exponents

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Ex. 1: Evaluate.

a)
$$2^{0}$$
 b) $(-11)^{0}$ c) $(-3)^{2}$ d) -3^{2} e) $\frac{6^{4}}{(6^{2})^{2}}$

$$= (= (-3)(-3) = -(3)(3) = \frac{6^{4}}{(6^{2})^{2}} = \frac{6^$$

$$g)(-3)^{-3} \text{ (h) } (-3)^{-4} \text{ i) } \left(\frac{2}{3}\right)^{-3} \text{ j) } \left(\frac{-2}{3}\right)^{-3} \text{ k) } 2^{-3} \times 2^{7} \text{ l) } \frac{9^{-1}(9^{-7})}{(9^{-3})^{2}}$$

$$= \left(\frac{1}{-3}\right)^{3} = \left(\frac{1}{-3}\right)^{4} = \left(\frac{3}{3}\right)^{3} = \left(\frac{3}{3}\right)^{3} = \frac{3}{3} = \frac$$

m)
$$\frac{a^{-2}b^{-3}c^{4}d^{5}}{e^{6}f^{7}g^{-8}h^{-9}}$$

$$= \frac{1}{a^{3}} \cdot \frac{1}{b^{3}} \cdot (4 \cdot d^{5})$$

$$= \frac{1}{a^{3}b^{3}} \cdot (4 \cdot d^{5})$$

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$$= \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}}$$

$$= \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}}$$

$$= \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}} \cdot \frac{1}{a^{3}b^{3}}$$

$$= \frac{1}{a^{3}b^{3}} \cdot \frac{1}{$$

 $= \frac{(40598)9}{32130607}$

Ex. 2: Rewrite each expression as an equivalent expression with a positive exponent. DO **NOT** EVALUATE.

a)
$$3^{-2}$$
 b) $\left(\frac{8}{3}\right)^{-11}$ c) $\left(-4\right)^{-2}$ d) $\frac{x^6}{x^9}$ e) $x^{10}y^{14} \div x^2y^{20}$

$$= \left(\frac{1}{3}\right)^2 - \left(\frac{3}{8}\right)^{11} = \left(\frac{1}{-4}\right)^3 = x^6 - 9$$

$$= x^{-3} = x^8y^{-6}$$

$$= \left(\frac{1}{3}\right)^3 = x^8$$
Summary
$$= \left(\frac{1}{5}\right)^3 = x^8$$

Today's Homework:

READ: p.407

pp. 407-409 # 1 – 9, 11, 12

SWYK Soon (not Tomorrow)