

March 25, 2016
 $(5x + 3)^5$ Due Monday
 * Exam #2 - Wednesday
 2.5, 3.1, 5.1, 5.2, 5.4, 5.5, 5.6

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$$5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \quad \left(\underbrace{-x}_{\text{base}} \right)^5 = \frac{(-x^5)^5}{(5)^5}$$

$$= \frac{-x^{5 \cdot 5}}{3125} = \frac{-x^{25}}{3125}$$

$$(-x)^5 = (-x) \cdot (-x) \cdot (-x) \cdot (-x) \cdot (-x)$$

$$= -x^5$$

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#46)

$$(9b^{6m})^3$$

$$= 9^3 \cdot (b^{6m})^3$$

$$= 729 \cdot b^{18m}$$

$$= 729b^{18m}$$

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$$\frac{(5x^2)^4}{5x^3} = \frac{5^4 \cdot (x^2)^4}{5 \cdot x^3}$$

$$= \frac{625 \cdot x^8}{5x^3}$$

$$= 125x^5$$

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$\frac{x^{-4}}{x^8}$ 2 ways to simplify

① quotient $x^{-4-8} = -12$ $x^{-12} = \frac{1}{x^{12}}$

② neg. Exp Rule #1 $\frac{x^{-4}}{x^8} = \frac{1}{x^8 \cdot x^4} = \frac{1}{x^{12}}$

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$$\frac{4^{-2}}{x} = \frac{1}{x \cdot 4^2} = \frac{1}{16x}$$

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$$\frac{(4x)^0}{x^{-2}} = \frac{1}{x^{-2}} = \frac{x^2}{1} = x^2$$

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$$\frac{x^{-4}y^2z^{-5}}{x^{-8}y^{-4}z^5} = \frac{x^8y^2y^4}{x^6z^5z^5} = \frac{x^2y^6}{z^{10}}$$

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