

MATH 6 HOMEWORK 23

May, 12 2019

Review Exponents Properties/Rules:

1. $a^0 = 1$
2. $a^m \cdot a^n = a^{m+n}$
3. $a^m \div a^n = \frac{a^m}{a^n} = a^{m-n}$
4. $(ab)^n = a^n \cdot b^n$
5. $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$
6. $a^n = \frac{1}{a^{-n}}$
7. $(a^m)^n = a^{m \cdot n}$

1. Simplify:

$$\begin{array}{lll} \text{(a)} \left(\frac{5a^2b^5}{4a^3b^3}\right)^3 = & \text{(b)} (2z^2 \cdot 3z^3 \cdot z)^2 = & \text{(c)} \frac{(-ab)^8}{(ab)^2} = \\ \text{(d)} \left(\frac{3ab^3}{15b}\right)^2 \cdot \frac{75c}{a^2b^6} = & \text{(d)} \left(\frac{3a^5b^2}{21ab}\right)^2 \cdot \frac{7^4}{a^{16}b^2} = & \end{array}$$

2. Simplify the following and show the answer in the exponent form

$$\begin{array}{lll} \text{a)} \frac{3^7 \cdot 2^7}{2^3 \cdot 2^4} = & \text{b)} \frac{6^5 \cdot 2^4}{3^5 \cdot 2^2} = & \text{c)} \frac{7^9 \cdot 2^5}{7^2 \cdot 2^4} = \\ \text{d)} \frac{11^4}{11^2 \cdot 5^2 \cdot 5^3} = & \text{e)} 7^4 \cdot 11^2 \cdot 11^{-5} \cdot 7^2 = & \text{f)} \frac{3^{-5} \cdot 2^7}{3^{-3} \cdot 2^4} = \\ \text{g)} \frac{42^2}{6^2} = & \text{h)} \frac{3^5 \cdot 3^{-5}}{3^9} = & \text{i)} \frac{x^2 \cdot y^2 \cdot x^{-3}}{x^2} = \end{array}$$

3. Sketch the following functions on separate graphs and show new X' and Y':

(a) $y = (x - 2)^2 - 2$

(b) $y = \frac{1}{x+2} + 2$