

KING FAHD UNIVERSITY OF PETROLUUM AND MINERALS

Math 001— Term 061

Quiz#2

Name: _____ ID#: _____ Sec#: _____ Sr#: _____

Q1: Find the coefficient of $\frac{y^2}{x}$ the expression $\left(\frac{1}{5x} - \frac{2}{3}y\right)^3$

Solution:

$$\begin{aligned} \text{Expression} &= \left(\frac{1}{5x} - \frac{2}{3}y\right)^3 = \left(\frac{1}{5x}\right)^3 - 3\left(\frac{1}{5x}\right)^2\left(\frac{2}{3}y\right) + 3\left(\frac{1}{5x}\right)\left(\frac{2}{3}y\right)^2 - \left(\frac{2}{3}y\right)^3 \\ &= \frac{1}{125x^3} - \frac{2}{25x^2}y + \frac{4}{15x}y^2 - \frac{8}{27}y^3 \end{aligned}$$

Coefficient of $\frac{y^2}{x}$ is $\frac{4}{15}$

Q2: Write the number $\frac{(2.3 \times 10^{-4})(3 \times 10^8)}{0.0000002}$ in scientific notation

Solution:

$$\frac{(2.3 \times 10^{-4})(3 \times 10^8)}{0.0000002} = \frac{(2.3 \times 10^{-4})(3 \times 10^8)}{2 \times 10^{-7}} = \frac{(2.3)(3)}{2} \times 10^{11} = 3.45 \times 10^{11}$$

Q3: Simplify $\sqrt[4]{32} - \frac{2}{\sqrt[4]{8}}$

Solution:

$$\sqrt[4]{32} - \frac{2}{\sqrt[4]{8}} = \sqrt[4]{2^5} - \frac{2}{\sqrt[4]{2^3}} = 2\sqrt[4]{2} - \frac{2}{\sqrt[4]{2^3}} \frac{\sqrt[4]{2}}{\sqrt[4]{2}} = 2\sqrt[4]{2} - \frac{2\sqrt[4]{2}}{2} = \sqrt[4]{2}$$

Q4: If $-3 < x < -1$, then write the expression $|3+x| + |2+2x| - \|-x\|$ without absolute value.

Solution:

$$|3+x| + |2+2x| - \|-x\| = (3+x) - (2+2x) + x = 1$$