Matn 3 Quiz on Ch 1, due on 3/112/25 at 11:59 pm Print your name Timothy Sanders
Show your detailed work.

1. Write each expression in simplest form. Assume that all variables are positive. Write the final answer without using negative exponents. each 5 pts.

a. $(-3x^7y^{-5}x^{-2})^2$

$(-3x^5y^{-5})^2$

$-3^2 x^{10} y^{-10}$

$9x^{10}y^{-10} = \boxed{\frac{9x^{10}}{y^{10}}}$

b. $\left(-\frac{8x^{-5}y^4}{7x^{-2}y}\right)^{-2}$

$\left(-\frac{8x^{-3}y^3}{7}\right)^{-2}$

$\left(-\frac{8y^3}{7x^3}\right)^{-1\cdot 2}$

$\left(-1\frac{8^{-1}y^{-3}}{7^{-1}x^{-3}}\right)^2$

$\left(-1\frac{7x^3}{8y^3}\right)^2$

$1\frac{7^2x^6}{8^2y^6} = \boxed{\frac{49x^6}{64y^6}}$

c. $\frac{(-3x^2y^{-3})^{-2}}{6x^5y^{-1}}$

$\frac{-3^{-2}x^{-4}y^6}{6x^5y^{-1}}$

$\frac{y^7}{-3^2\cdot 6x^9} = \boxed{\frac{y^7}{54x^9}}$

2. Simplify each radical expression. Use absolute value symbols where needed. Each 5 pts.

a. $\sqrt[6]{128x^6y^{12}z^{18}}$

64

32

16

8

4

2

$\boxed{2xy^2z^3\sqrt[6]{2}}$

b. $\sqrt[3]{-216x^3y^4zw^7}$

36

$\boxed{-6xyw^2\sqrt[3]{yzw}}$

3. *Simplify*

$\frac{3\cdot 14-2\cdot\sqrt{64}}{13(\sqrt{36}-2^2)}$

$\frac{42\quad 8}{3\cdot 14-2\cdot\sqrt{64}}$

$13(\sqrt[6]{36}-2^4)$

$\frac{42-16}{13(2)} = \frac{26}{26} = \boxed{1}$

4. Simplify the compound rational expression 5 pts.

$$\frac{\frac{2}{x-3}-\frac{5}{x-3}}{\frac{1}{x+1}}$$

$\frac{\frac{-3}{x-3}}{\frac{1}{x+1}}$ → $\frac{-3}{x-3} \div \frac{1}{x+1} = \frac{-3}{x-3} \cdot \frac{x+1}{1}$ $\frac{-3(x+1)}{x-3} = -3$

Simplify each expression. (each 5pts)

$5-4(6-(2-3)^3-2^2)(4-(5-3))$

$(6-(-1)-4)(4-2)$

$5-4(3)\quad(2)$

$5-24 = \boxed{-19}$

$8-(-7)\left[\frac{6-1(6-10)}{4-3(5-7)}\right]$ $\frac{(6+4)}{4+6} = 1$

$8+7(1) = \boxed{15}$

3. Simplify each 5 pts

$21-[2^4-(7-5)-10]+8\cdot 2$

$21-(16-2-10)+16$

$21-4+16$

$17+16 = \boxed{33}$

5. 2 pts. Simplify: $4\cdot 8-1\cdot\sqrt{169}$

$4\cdot 8-1\cdot 13$

$32-13 = \boxed{19}$