Quiz 9

Name: _____

Solutions given without showing work will earn a zero. Circle your answers.

Problem 1. [3 points] Circle **True** or **False**

(a) $\left(\sqrt[4]{12xy^2}\right)^5 = \sqrt[4]{(12xy^2)^5}$ (True)   False

(b) $(xy)^{3/7} = (\sqrt[3]{xy})^7$ True   (False)

$$(xy)^{3/7} = \left(\sqrt[7]{xy}\right)^3$$

(c) $(-9)^{3/2} = -27$ True   (False)

$$(-9)^{3/2} = \left(\sqrt{-9}\right)^3$$

But $\sqrt{-9}$ DNE

Problem 2. [3 points] Simplify $\sqrt[3]{24x^5y^7}$. *(You may want to factor the "inside" first.)*

24
⌃
(2) 12
   ⌃
  6 (2)
  ⌃
(2)(3)

$$\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 3 \cdot x^3 \cdot x^2 \cdot y^6 \cdot y^1}$$
$$= \boxed{2xy^2 \sqrt[3]{3x^2 y}}$$

Problem 3. [4 points] Multiply and simplify

$$(-2\sqrt{10x})(16\sqrt{50x^7})$$

$$(-2) \cdot 16 \cdot \sqrt{10x} \cdot \sqrt{50x^7}$$

$$= -32\sqrt{500x^8}$$

$$= -32x^4\sqrt{2 \cdot 2 \cdot 5 \cdot 5 \cdot 5}$$

$$= -32 \cdot 2 \cdot 5 \, x^4 \sqrt{5} = \boxed{-320x^4\sqrt{5}}$$

500
⌃
(5) 100
    ⌃
   10 10
   ⌃   ⌃
 (5)(2)(5)(2)