

Quiz #1

SOLUTIONS

Answer all questions and show all your work. Only the Sharp EL531 calculator is permitted.

Question 1 (3 points)

Simplify

$$\frac{(2x^2y^{-3}z)^{-2}}{x^3y^{-2}z^5} = \frac{2^{-2}x^{-4}y^6z^{-2}}{x^3y^{-2}z^5}$$

$$= \frac{y^8}{4x^7z^7}$$

Question 2 (3 points)

Simplify

$$(9x^4)^{\frac{1}{2}}(8x^9)^{\frac{2}{3}} = (9^{\frac{1}{2}}x^2)(8^{\frac{2}{3}}x^6)$$

$$= (3x^2)(4x^6)$$

$$= 12x^8$$

Question 3 (2 points)

Rationalize the denominator.

$$\frac{8}{3-\sqrt{5}} \cdot \frac{3+\sqrt{5}}{3+\sqrt{5}} = \frac{24+8\sqrt{5}}{9-5}$$

$$= \frac{24+8\sqrt{5}}{4}$$

$$= 6+2\sqrt{5}$$

Question 4 (2 points)

Expand and simplify

$$(\sqrt{x}+1)(2\sqrt{x}-5) = 2x-5\sqrt{x}+2\sqrt{x}-5$$

$$= 2x-3\sqrt{x}-5$$