

EXAM 4
Math 101
June 30, 2005

Name _____

Do all work neatly. Show all of your work. Circle your final answer where appropriate.

1. Simplify the following. Express any answer using only positive exponents:

(a) $\sqrt{32a^3b^4}$.

(b) $\sqrt[3]{216x^3y^4}$.

(c) $\frac{\sqrt[4]{81x^9y^6}}{\sqrt[4]{3xy^4}}$

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

(e) $\sqrt[5]{160x^5y^{12}}$

2. Simplify:

(a) $(2^{\frac{2}{3}})^{\frac{3}{4}}$.

(b) $(2 - \sqrt{3})(\sqrt{3} - 4)$.

(c) $\sqrt{36} + \sqrt{27} - \sqrt{12} - 6$.

(d) $3\sqrt[4]{8}(4\sqrt[4]{2} - 6\sqrt[4]{3y})$

(e) $x^{\frac{2}{9}} \cdot x^{\frac{5}{9}} \cdot x^{\frac{2}{9}}$

3. Solve by the method indicated:

(a) $x^2 - 9x = -8$ by factoring

(b) $(x - 3)^2 = 36$ by using the square root property

(c) $x^2 - 8x + 16 = 81$ by using the square root property

(d) $x^2 + 10x = 11$ by completing the square

(e) $2x^2 + 5x = 3$ by the quadratic formula.

4. Solve for x . (You may use any method.)

(a) $\frac{\sqrt{x+4}}{3} = 6.$

(b) $x^2 - 11x + 30 = 0.$

(c) $4x^2 + 3x = 6.$

(d) $16x^2 - 16x + 1 = 0.$

(e) $3x - 7 = 5 + \sqrt{4x^2}.$