Name: _____   Date:

Course: _____   Nyack College

College Algebra

Preliminary Assessment #2

Directions: Provide complete responses to each question. Make sure to show your work.

1. Simplify the following expressions (leave in common radical form):

    a. $\sqrt{50} + \sqrt{32}$

    b. $\sqrt{27} + \sqrt{300}$

    c. $\sqrt{500} + \sqrt{45} - \sqrt{180}$

    d. $\dfrac{\sqrt{36} - \sqrt{16}}{2}$

2. Evaluate each expression:

    a. $(12 - 4) + 8$

    b. $[(1 - 9) + 8]^3$

    c. $\dfrac{(4)(7) - 4}{3 \times 2^2}$

    d. $\dfrac{6\{9 - 2(7 + 6)]}{3}$

3. Factor each expression completely:

  a. $x^2 + 12x + 36$

  b. $2x^2 - 17x + 36$

  c. $x^3 + x^2 - 6x$

  d. $x^2 - 36$

4. Evaluate each of the following fractional operations:

    a. $\dfrac{1}{2} + \dfrac{3}{2}$

    b. $1\dfrac{1}{2} + \dfrac{3}{2} - 3$

    c. $\dfrac{2}{3} \div \dfrac{4}{3} + \dfrac{1}{4}$

    d. $\dfrac{2}{3} \div \dfrac{4}{3} + \dfrac{1}{4} \times \dfrac{3}{2}$

5. Solve for the given variable:

    a. $5x - 20 = 25$

    b. $2x + 6(x - 2) = 20$

c. $\dfrac{46}{x} - \dfrac{10}{x} = 6$

d. $x - \dfrac{3}{x} = 2$