MATH 022 Sections 016 and 019
Fall 2007
MOCK QUIZ 1

1. Find all real solutions of the equation $\frac{1}{x+2} - \frac{1}{x-3} + \frac{21}{4} = 0$.

   a) $x = 1, x = -2$

   b) $x = 1, x = -3$

   c) $x = 3, x = -2$

   d) $x = 6, x = 4$

   e) $x = -1, x = -4$

2. I have a box of marbles. I discard two-thirds of them and make a pile of the remaining, then add two to the pile, discard four-fifths of what results, add one to the pile, and then keep only a seventh of the marbles I have. I finish with one marble in the pile. How many were in the box?

   a) \$18

   b) \$75

   c) \$84

   d) \$96

   e) \$300

3. What quantity of a 40% acid solution must be mixed with a 10% solution to produce 300 mL of a 35% solution?

   a) 175 mL

   b) 150 mL

   c) 250 mL

   d) 200 mL

   e) 100 mL

4. Find all x that satisfy the inequality $x^2 \geq 4(16 - 3x)$.

   a) $(-\infty, -10] \cup [3, \infty)$

   b) $(-\infty, -16] \cup [4, \infty)$

   c) $(-\infty, 32) \cap (-2, \infty)$

   d) $(-\infty, -4) \cup (64, \infty)$

   e) $(-\infty, -12) \cup (16, \infty)$

5. The complex number $\dfrac{2(3i - 1)}{2 - i}$ is a solution to which of the following equations?

   a) $x^2 + 4x + 8 = 0$

   b) $x^2 - 4x - 8 = 0$

   c) $x^2 + x + 1 = 0$

   d) $x^2 + x + 16 = 0$

   e) $x^2 + x + 8 = 0$