Math 0305, Sample Exam #3/Quiz #8 Name _____
EPCC Fall 2006

DUE October 26, 2006

Directions: Please read all questions carefully. Answer all parts of each question. Please circle or box your final answers. Show all work and justify all answers for full credit. Partial credit is always given for correct methods, partial correct calculations, and correct justification (rules, theorems, definitions, etc). Point values for each question are indicated in parentheses. Good luck.

Special Reminder Notice for Exam 3:

You may bring one index card (max size 4x6) with notes. These notes should include relevant formulas. In addition, include any other information that you think will be beneficial to solving the problems (i.e. example problems, definitions, rules).

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1) Simplify the following so that all exponents are **positive** real numbers. Then rewrite the answer as a radical expression

$$\frac{x^{2/3}x^{-1}}{x^{-1/2}}$$

2) Simplify. Recall the rules for simplifying radical expressions found on page 522.

a. $\dfrac{\sqrt{32x^5y}}{\sqrt{2xy^3}}$

b. $\dfrac{\sqrt{n}}{\sqrt{n}-\sqrt{m}}$

3) State the domain of the following radical functions using any appropriate notation (interval, set-builder, etc).

a. $f(x)=(2x-7)^{1/5}$

b. $g(x)=\sqrt[4]{3-2x}+1$

4) Perform the indicated operation and simplify.

a. $\sqrt[3]{54x^7y^3}-x\sqrt[3]{128x^4y^3}-x^2\sqrt[3]{2xy^3}$

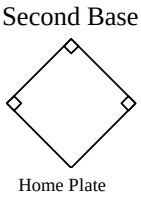
b. $\left(3\sqrt{x}+\sqrt{3y}\right)^2$

c. $\left(-1-2i\right)-\left(1+2i\right)$

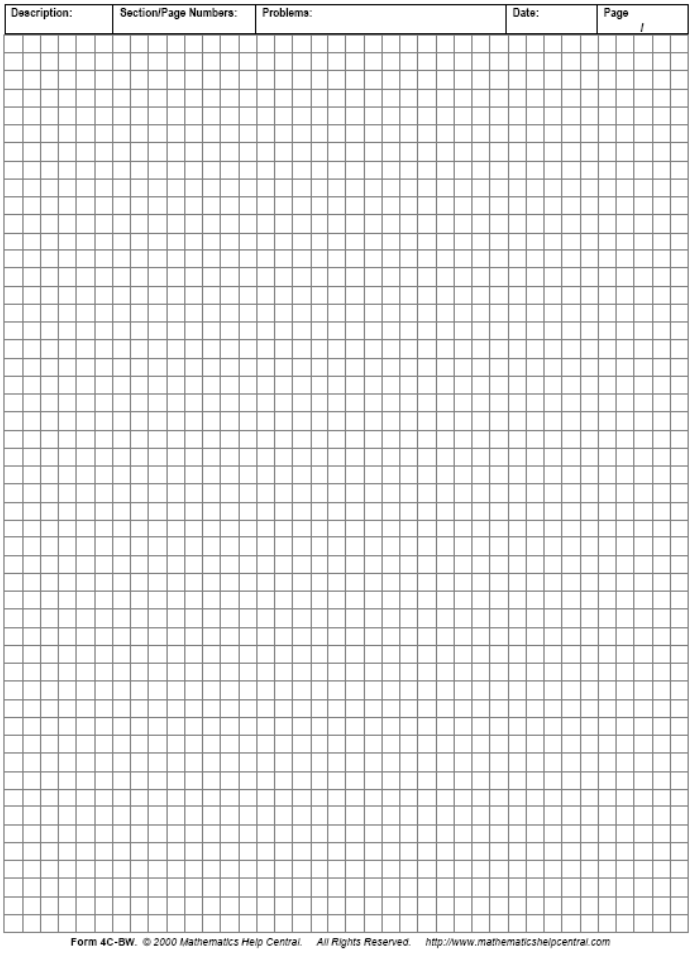
d. $\left(\sqrt{-3}\right)\left(\sqrt{-12}\right)$

e. $\dfrac{\left(2+3i\right)}{\left(1-i\right)}$

5) The bases on a baseball diamond are 90 ft apart. Find the distance from home plate to second base.



6) Sketch the graph of the following radical function: $f(x) = (x-2)^{1/3}$



7) Solve the following equations for x.

a. $\sqrt{x+7} = \sqrt{x} + 1$

b. $2\sqrt{x-1} + x = 9$