

ECONOMICS 207
SPRING 2007
LABORATORY EXERCISE 2

Problem 1. Carry out the following long division operations.

a.

$$\begin{array}{r} 13 \\ 11 \overline{)143} \\ \underline{110} \\ 33 \\ \underline{33} \\ 0 \end{array}$$

b. $16 \overline{)272}$

c. $19 \overline{)431}$

d. $36 \overline{)2700}$

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e. $73 \overline{)6872}$

f. $241 \overline{)58472}$

g. $18 \overline{)4374}$

Problem 2. Complete the square in the following and then write as $(x + a)^2 + b$.

a. $x^2 + 6x$

$$(x + 3)^2 - 9$$

b. $x^2 - 10x$

c. $2x^2 - 16x$

d. $x^2 - 10x + 25$

e. $x^2 + \frac{1}{2}x - \frac{1}{4}$

f. $x^2 - 4x(a + bt)$

Problem 3. Simplify, add, subtract, multiply or divide the following fractions. Express all answers in reduced form.

a. $\frac{63}{36} + \frac{7}{8}$

b. $\frac{7}{25} + \frac{17}{35}$

c. $\left(\frac{84}{161}\right) \left(\frac{7}{\frac{1}{4}}\right)$

d. $\frac{1}{12} + \frac{2}{3} + \frac{7}{36} - \frac{5}{16}$

e. $\frac{1}{5} + \frac{12}{49} + \frac{6}{105}$

f. $\frac{7}{121} + \frac{5}{77} + \frac{6}{91}$

Problem 4. Factor the following.

a. $x^2 + 6x + 9$

b. $x^2 - 10x + 25$

c. $4x^2 - 64x + 256$

d. $2x^2 - 4x - 30$

e. $6x^2 + 11x - 10$

f. $27x^2 + 24x - 16$

Problem 5. Solve the following equations for x .

a. $8x + 5 = 21$

b. $4x + 3 = 17 - 3x$

c. $\frac{3x+2}{4x-4} = 2$

d. $\frac{x+7}{6x+3} = \frac{12}{33}$

e. $\frac{x-5}{x+7} = \frac{1}{5}$

f. $6x^2 - x - 2 = 0$

g. $x^2 + x - 12 = 0$

h. $x^2 + 2x - 24 = 0$

i. $6x^2 - 11x - 10 = 0$

j. $x^2 + 2x + 3 = 0$

Problem 6. Solve the following equations for x_1 .

a. $16x_1^{-1/2} - 2 = 0$

b. $8x_1^{-1/2} - 4 = 0$

c. $32x_1^{-1/2} - 4 = 0$

d. $16x_1^{-3/4} - 2 = 0$

e. $40x_1^{-3/4} - 5 = 0$

f. $32x_1^{-2/5} - 2 = 0$

g. $48x_1^{-4/5} - 3 = 0$

h. $64x_1^{-5/6} - 2 = 0$

i. $18x_1^{-2/3} - 2 = 0$