

Spring, 1999  
Peterson

MATH 105.

Homework 9.

**DUE: Friday, April 2.**

P1. Solve for  $x$  in each case:

(1)  $(x + 4)^2 + (x + 5)^2 = (x + 6)^2$ .

(2)  $(x + 1)(2x + 3) = (x + 2)(x + 4) + x + 10$ .

(3)  $(2x + 1)^2 = (x + 2)(x + 7) - 1$ .

P2. Write each of the following as a single fraction in reduced factored form.

(1)  $\frac{x^2 - 2x - 3}{2x^2 + 3x + 1} \cdot \frac{2x^2 - 3x - 2}{x^2 - x - 6}$ .

(2)  $\frac{6x^2 - 5xy + y^2}{2x^2 + xy - y^2} \cdot \frac{x^2 + xy}{9x^2 - y^2}$ .

(3)  $\frac{2x^2 + 7x - 15}{3x^2 + 13x - 10} \div \frac{2x^2 - x - 3}{x^2 - x - 2}$ .

(4)  $\frac{x^2 - 4}{x^2 + 3x - 10} \div \frac{x^2 + x - 2}{x^3 + 4x^2 - 5x}$ .

(5)  $\frac{3}{x - 1} + \frac{2}{x + 2}$ .

(6)  $\frac{3}{x - 1} - \frac{2}{x + 2}$ .

(7)  $\frac{1}{x^2 + x - 2} + \frac{1}{x^2 + 2x - 3}$ .

(8)  $\frac{1}{x^2 + x - 2} - \frac{1}{x^2 + 2x - 3}$ .

(9)  $\frac{3}{x^2 + x - 2} - \frac{2}{x^2 + 2x - 3}$ .

P3. In a certain rectangle, the length of the rectangle is two feet less than five times its width, and the area of the rectangle is seven square feet. Find the length and width of the rectangle.