MATH 151
PRACTICE EXAM 5
Name:

Chap. 5
READ: You must show work in order to receive credit.

1. Factor each expression completely if it is factorable.
   a) \(5x^2 - 125\)  
   b) \(x^2 + 9 - 6x\)  
   c) \(81y^4 - 1\)  
   d) \(x^3 - 2x^2 + 3x - 6\)
   
   e) \(m^8 + 8m^5\)  
   f) \(x^3 + x^2 - 12x\)  
   g) \(10b^3 + 11b - 6\)  
   h) \(18y^2 + 21y - 9\)
   
   i) \(6a^2 - 31a + 5\)  
   j) \(3a^2 + 18ab + 24b^2\)  
   k) \(25x^2 - 60x + 36\)
   l) \(8x^2 + 10xy + 2y^2\)

2. Solve each equation by factoring.
   a) \(6x^2 + 2x = 0\)  
   b) \(6x^2 - 13x = -6\)  
   c) \(x(x - 2) = 24\)  
   d) \((x - 3)^2 = 25\)

3. Find the x-intercepts for the graph of \(y = 4x^2 + x - 3\).

4. The length of the frame for a rectangular is 14 longer than the width. The area of the gate is 240 square feet. Find the width and length of the rectangular.

5. The diagonal measure of a rectangular computer screen is 51 cm. If the screen is 24cm tall, how wide is it?

6. The equation, \(h = -16t^2 + 40t + 96\), describes the height above the water (in feet) for a ball that is thrown upward from a cliff after \(t\) seconds. Find how long it will take for the ball to hit the water.