

## Homework S6

1. Do problems 1, 2, 3 on page 516 of the text.
2.
  - (a) Parameterize the line segment in the plane starting at  $(-3, 7)$  and ending at  $(4, -2)$ .
  - (b) Parameterize the line segment in three space starting at  $(1, -2, 5)$  and ending at  $(1, 4, -3)$ .
3. Find graph parameterizations of the curves
  - (a)  $y = 2x - x^3$  from  $(-1, -1)$  to  $(3, -21)$ .
  - (b)  $x = y^2 - 3y + 5$  from  $(3, 1)$  to  $(15, -2)$ .
4. Find three parameterizations of the ellipse

$$\frac{x^2}{4} + \frac{y^2}{9} = 1$$

corresponding to the three parameterizations of the circle given in class.

5. Set up integrals to find the lengths of each of the curves in exercises 2, 3, 4.