Answers to Even Exercises, Homework Set 4

Section 11.3  # 8  $f_x(2, 1) \approx 2.8$, $f_y(2, 1) \approx -2.1$

       # 54  $u_{xy} = 8x^3 y - 10y^4 = u_{yx}$

       # 66  $f_v(40, 20)$ is approximately equal to 1.15, and $f_t(40, 20)$ is approximately 0.45. The linear approximation to f near $(40, 20)$ is then:

$$f(v, t) \approx 28 + 1.15(v - 40) + 0.45(t - 20)$$

           Using this we get $f(43, 24) \approx 33.25$ ft.

       # 70  a) -20/3 degC/m , b) -10/3 degC/m

Section 11.4# 16  $f_v(40, 20)$ is approximately equal to 1.15, and $f_t(40, 20)$ is approximately 0.45. The linear approximation to f near $(40, 20)$ is then:

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