

14.3, number 55: **Verify that**  $w_{xy} = w_{yx}$  **for**  $w = \ln(2x + 3y)$ .

**Answer:** We compute

$$w_x = \frac{2}{2x+3y}, \quad w_{xx} = \frac{-4}{(2x+3y)^2}, \quad w_{xy} = \frac{-6}{(2x+3y)^2},$$
$$w_y = \frac{3}{2x+3y}, \quad w_{yx} = \frac{-6}{(2x+3y)^2}, \quad \text{and} \quad w_{yy} = \frac{-9}{(2x+3y)^2}.$$