

Econ 361 Math Self-Assessment

1. Find dy/dx :

a. $y = \frac{1}{2} \ln 6x$

b. $y = \theta x^{2/3}$

c. $y = \ln(x + 2)$

d. $y = g(f(x))$

2. Find $\partial U/\partial x$:

a. $U = \frac{2}{5} \ln x + \frac{3}{5} \ln y$

b. $U = x^{1/4}y^{3/4}$

3. Simplify:

$$\frac{\frac{2}{3}x^{-1/3}y^{1/3}}{\frac{1}{3}x^{2/3}y^{-2/3}}$$

4. Maximize $U = x^{1/4}y^{3/4}$ subject to the constraint that $x + y = 100$.

5. Maximize $U = \min(2x, y)$ subject to the constraint that $x + y = 150$.