

Solutions to Quiz 8

MATH 139-02
Tuesday, March 2, 2004

Differentiate each function.

1. $f(x) = x^4 - 3x^2 + 5x - 2$

Solution: $f'(x) = 4x^3 - 3(2x) + 5 = 4x^3 - 6x + 5.$

2. $f(x) = \frac{1}{x^4}$

Solution: $f(x) = x^{-4}$, so $f'(x) = -4x^{-5}.$

3. $f(x) = \sqrt{x^3}$

Solution: $f(x) = x^{3/2}$, so $f'(x) = \frac{3}{2}x^{1/2}.$

4. $f(x) = \ln(x) - x^{31/5}$

Solution: $f'(x) = \frac{1}{x} - \frac{31}{5}x^{26/5}.$