

Math 1400
Homework 3
Due Feb 09

1. Problem No. 39 from Text book Page 584.
2. Problem No. 40 from Text book Page 584.
3. Problem No. 59 parts (a) and (b) from Text book Page 585.
4. Problem No. 60 parts (a) and (b) from Text book Page 585.

For problems 5, 6 and 7 use *Power Rule*.

5. (a) $f(x) = 3x - \sqrt{x} + \frac{4}{x}$
(b) $f(x) = \sqrt{x} + \sqrt[3]{x} - \sqrt[4]{x}$
(c) $f(x) = \frac{20}{x^5} + \frac{1}{x^3} - \frac{2}{x}$
6. (a) $f(x) = \frac{x}{5} + \frac{5}{x}$
(b) $f(x) = x^{-\frac{3}{4}} - 3x^{\frac{2}{3}} + x^{\frac{5}{4}} + \frac{2}{x^4}$
(c) $f(x) = \frac{3x^5 - 4x^4 + 2x^3 - 5x^2 - 8x + 4}{x^2}$
7. (a) $f(x) = \left(\sqrt{x} - \frac{1}{\sqrt{x}}\right)^2$
(b) $f(x) = \left(\sqrt{x} + \sqrt[3]{x}\right)^2$
(c) $f(x) = \sqrt{11x}$
8. Use *Product Rule* for the following problems:
(a) $f(x) = (4x^{\frac{1}{2}} - 1)(3x^{\frac{1}{3}} + 2)$
(b) $f(x) = (\sqrt[3]{x} - 5x^2 + 4)(4x^2 + 11x - 5)$
(c) $f(x) = \left(x + \frac{2}{x}\right)(3x^2 - 1)$
9. (a) $f(x) = 6x^{-4}(6x^3 + 10x^2 - 8x + 3)$
(b) $f(x) = (5\sqrt{x} - 7)(x^3 - 2x - 11)$
(c) $f(x) = (x - 2)^2$
10. Use *Product Rule* for the following problems:
(a) $f(x) = (x^4 - 2x^3 - 7)(3x^2 - 5x)$
(b) $f(x) = (5x^3 - x^2)\left(x - \frac{4}{x}\right)$