The Chain Rule

Questions: differentiate the following equations

1.
$$y = (2x+1)^2$$

2.
$$y = (5-3x)^2$$

3.
$$y = (3x^2 - 4)^2$$

4.
$$y = (2-x^2)^2$$

5.
$$y = (2x^2 - x + 3)^3$$

6.
$$y = (1+x-3x^2)^5$$

7.
$$y = (3x^{-3} - 2x)^{1/2}$$

8.
$$y = (3x - 2x^{-5})^{3/5}$$

9.
$$(4x^2 - x^{-3})^{1/2}$$

10.
$$(2x^{-2} - x^3)^{1/5}$$

answers:

1. $8x + 4$
        2. $-6(3x - 5)$

3. $12x(3x^2 - 4)$
    4. $4x(x^2 - 2)$

5. $(12x - 3)(2x^2 - x + 3)^2$
    6. $(5 - 30x)(1 + x - 3x^2)^4$

7. $(3x^3 - 2x)^{-0.5}(-4.5x^4 - 1)$
    8. $(3x - 2x^{-5})^{-0.4}(1.8 + 6x^{-6})$

9. $(4x^2 - x^3)^{-\frac{1}{4}}(4x + 1.5x^4)$
    10. $(2x^{-2} - x^3)^{-2/3}(-(4/3)x^{-3} - x^2)$