1. a. $f(x) = (2x+1)^2 = 4x^2 + 4x + 1$

   $f'(x) = 8x + 4$

   b. $(2x+1)(2x+1)$

   $f'(x) = 2(2x+1) + 2(2x+1) = 4(2x+1) = 8x+4$

   c. $(2x+1)^2$

   $f'(x) = 2(2x+1)2 = 4(2x+1) = 8x+4$

   d. They are all the same

2. a. $\left(8 + \frac{1}{2\sqrt{x}}\right)(5x^2 + 3) + (8x + \sqrt{x})(10x)$

   b. $3(5x+2)^2(5)(2x-3)^8 + (5x+2)^3 8(2x-3)^7 (2)$

   c. $3x^2(6x+1)^2(7x-2)^4 + x^3(2)(6x+1)(6)(7x-2)^4 + x^3(6x+1)^2(4)(7x-2)(7)$

   d. $(8x+3)e^{x^2-7x} + (4x^2+3x)e^{x^2-7x}(2x-7)$

   e. $\dfrac{\left(\frac{1}{3}x^{-2/3}\right)(\sqrt{x}+3) - (\sqrt[3]{x}-7)\left(\frac{1}{2}x^{-1/2}\right)}{(\sqrt{x}+3)^2} = \dfrac{\frac{1}{3\sqrt[3]{x^2}}(\sqrt{x}+3) - (\sqrt[3]{x}-7)\left(\frac{1}{2\sqrt{x}}\right)}{(\sqrt{x}+3)^2}$

   f. $\frac{1}{2}\left(\frac{x^2+x}{x^2-x}\right)^{-1/2}\left(\dfrac{(2x+1)(x^2-x) - (2x-1)(x^2+x)}{(x^2-x)^2}\right) = \frac{1}{2}\sqrt{\frac{x^2-x}{x^2+x}}\left[\dfrac{(2x+1)(x^2-x) - (2x-1)(x^2+x)}{(x^2-x)^2}\right]$

   g. $6(2x^3 + (4x-5)^2)^5(6x + 2(4x-5)(4))$