Use the product or chain rule to find derivatives of the following functions.

1. \( f(x) = (x^2 - 5x + 2)(x - \frac{2}{x}) \)

2. \( f(x) = \frac{x^2 + 1}{\sqrt{x}} \)

3. \( f(x) = \frac{1}{5} x^5 + (x^2 + 1)(x^2 - x - 1) + 28 \)

4. \( f(x) = \frac{2x - 1}{2x + 1} \)

5. Find the derivative of \( f(x) = (3x + 5)^2 \)
   a. By FOILing and applying basic rules of differentiation.
   
   b. By using the chain rule. Confirm that both methods give the same answer.

Use the chain rule to find derivatives of the following functions

6. \( f(x) = (2x - 1)^3 \)

7. \( f(x) = \sqrt{3x - 2} \)

8. \( f(x) = \left(\frac{x + 3}{x - 2}\right)^3 \)