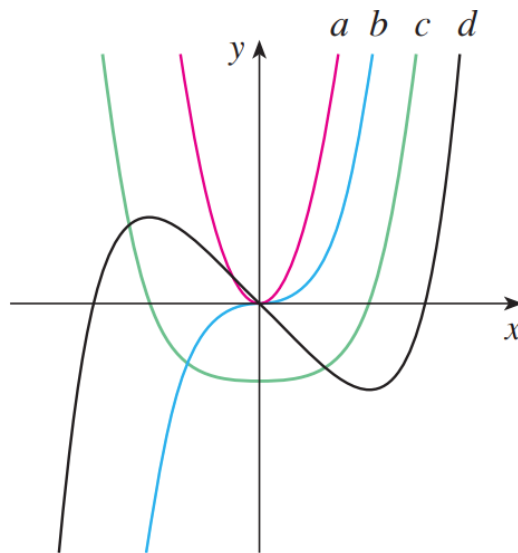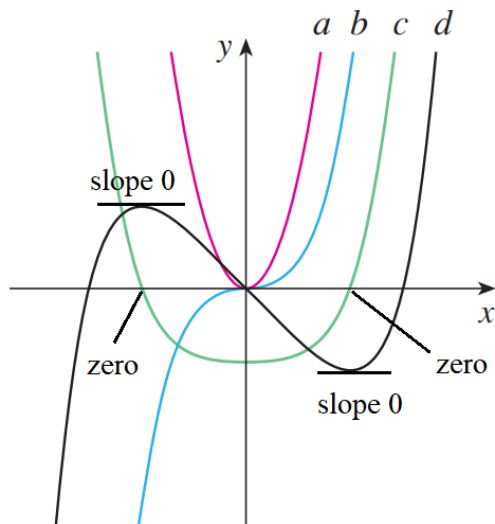## Exercise 50

The figure shows the graphs of f, f', f'', and f'''. Identify each curve, and explain your choices.

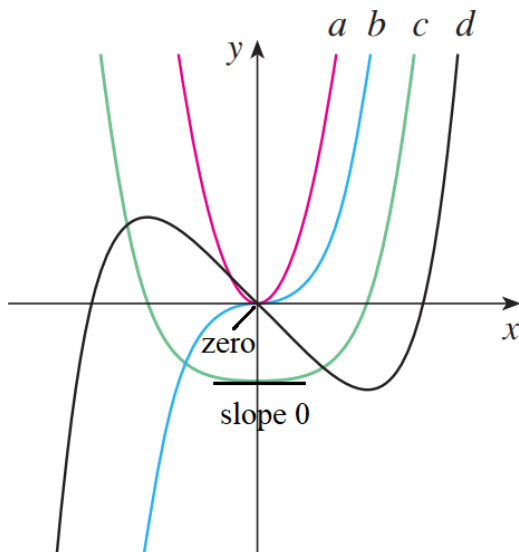**Solution**

The c-curve is the derivative of the d-curve because the c-curve is zero where the d-curve has zero slope.

The b-curve is the derivative of the c-curve because the b-curve is zero where the c-curve has zero slope. Additionally, the b-curve is negative for $x < 0$ and positive for $x > 0$.

The a-curve is the derivative of the b-curve because the a-curve is zero where the b-curve has zero slope. Additionally, the a-curve is positive for $x < 0$ and positive for $x > 0$.
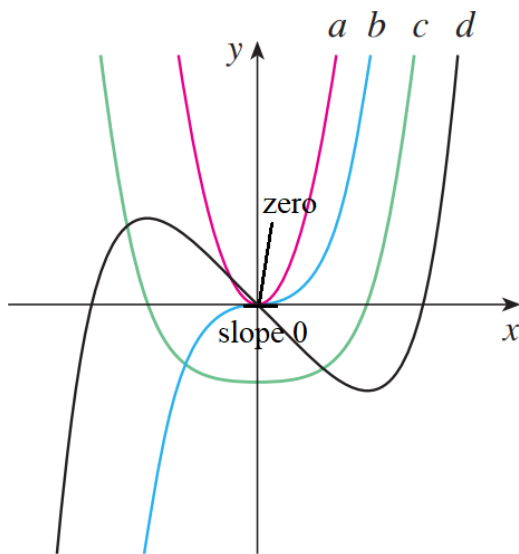
Therefore, the d-curve is $f(x)$, the c-curve is $f'(x)$, the b-curve is $f''(x)$, and the a-curve is $f'''(x)$.