$f(x) = (x-3)\sqrt{x}$

$u = x - 3$ $\qquad$ $v = \sqrt{x}$

$u' = 1$ $\qquad$ $v' = \frac{1}{2\sqrt{x}}$

$$f'(x) = 1 \cdot \sqrt{x} + (x-3) \cdot \frac{1}{2\sqrt{x}}$$

$$= \sqrt{x} + \frac{x-3}{2\sqrt{x}}$$

$$= \frac{2x + x - 3}{2\sqrt{x}}$$

$$= \frac{3x - 3}{2\sqrt{x}}$$

$$= \frac{3(x-1)}{2\sqrt{x}}$$