

Exercise 17

Differentiate the function.

$$S(p) = \sqrt{p} - p$$

Solution

Rewrite the given function.

$$S(p) = p^{1/2} - p$$

Take the derivative of this function.

$$S'(p) = \frac{d}{dp}(p^{1/2} - p)$$

Use the difference rule.

$$S'(p) = \frac{d}{dp}(p^{1/2}) - \frac{d}{dp}(p)$$

Use the power rule.

$$S'(p) = \left(\frac{1}{2}p^{-1/2}\right) - (1)$$

Therefore,

$$S'(p) = \frac{1}{2}p^{-1/2} - 1.$$