

**Exercise 35**

Calculate  $y'$ .

$$y = \cot(3x^2 + 5)$$

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**Solution**

Calculate  $y'$  by using the chain rule.

$$\begin{aligned}y' &= \frac{d}{dx} \cot(3x^2 + 5) \\&= -\csc^2(3x^2 + 5) \cdot \frac{d}{dx}(3x^2 + 5) \\&= -\csc^2(3x^2 + 5) \cdot (6x) \\&= -6x \csc^2(3x^2 + 5)\end{aligned}$$