

3. Given the function $s(j)=2j^2+4j$, find an equation of the secant line containing $(1,s(1))$ and $(4,s(4))$. Express the equation in slope-intercept form.

$$x = -20 + 14j$$

$$x = 20 - 14j$$

$$x = -8 + 14j$$

$$x = -7 + \frac{43j}{3}$$

Solution

The line passing through the two points has the slope:

$$\begin{aligned} & \frac{s(4)-s(1)}{4-1} \\ &= \frac{(2(4)^2+4(4))-(2(1)^2+4(1))}{3} \\ &= \frac{48-6}{3} \\ &= 14 \end{aligned}$$

using one of the points, say $(1,6)$ and the slope to get the equation of the secant line:

$$x-6 = 14(j-1)$$

The equation in slope-intercept form:

$$x = -8 + 14j$$