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

$a = -20 + 7x$

$a = 20 - 7x$

$a = -8 + 7x$

$a = -7 + \frac{15x}{2}$

Solution

The line passing through the two points has the slope:

$$\frac{d(4)-d(2)}{4-2}$$
$$= \frac{(1(4)^2+1(4))-(1(2)^2+1(2))}{2}$$
$$= \frac{20-6}{2}$$
$$= 7$$

using one of the points, say $(2,6)$ and the slope to get the equation of the secant line:

$a-6 = 7(x-2)$

The equation in slope-intercep form:

$a = -8 + 7x$