The Skyscraper Problem: Quadratic Solution

Finding *a*

$19 = 2a$

$a = 9.5$

Now we have $y = 9.5x^2 + bx + c$

Finding *c*

The cost of 0 floors is 0 dollars, so the y-intercept, c, is 0.

Now we have $y = 9.5x^2 + bx + 0$

Finding *b*

Substitute the known point (2, 171) into the equation.

$171 = 9.5(2^2) + b(2)$

$171 = 38 + 2b$

$\frac{133}{2} = \frac{2b}{2}$

$66.5 = b$

Which leaves us with $y = 9.5x^2 + 66.5x$ **, or, in the context of this situation,** $f(n) = 9.5n^2 + 66.5n$