# Chapter 4 - Section 2

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January 30, 2024

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# Exercises

### 9

We follow the standard recipe.

$$r^2 = 3r + 10$$
$$r^2 - 3r - 10 = 0$$
$$(r + 2)(r - 5) = 0$$

r = -2 or r = 5. The general solution form is $\alpha_1(-2)^n + \alpha_2(5)^n$. From the base cases:

$$F(0) = 4$$
$$= \alpha_1 + \alpha_2$$
$$F(1) = 13$$
$$= -2\alpha_1 + 5\alpha_2$$

Which by substitution implies $\alpha_1 = 1$ and $\alpha_2 = 3$. Therefore $F(n) = (-2)^n + 3(5)^n$.