

## Notes 3-4

### Practice with Recursive and Explicit Equations of Arithmetic and Explicit Sequences

Sec 1 H

Unit 3

#### Practice Using Recursive Equations:

Use the following recursive equations to find the requested values.

1)  $f(1) = 1$   $f(x) = 2f(x-1) + 3$

$$\begin{aligned} f(1) &= 1 \\ f(2) &= 5 \\ f(3) &= 13 \\ f(4) &= 29 \\ f(5) &= 61 \end{aligned}$$

$$\begin{aligned} f(2) &= 2 \cdot f(2-1) + 3 \\ f(2) &= 2 \cdot f(1) + 3 \\ f(2) &= 2 \cdot 1 + 3 \end{aligned}$$

$$\begin{aligned} f(3) &= 2 \cdot f(2) + 3 \\ f(3) &= 2 \cdot 5 + 3 \end{aligned}$$

- Fill in the given info.
- Next x-value, plug it in.
- Figure out the inside of ( )
- Replace f( ) with given info.

2)  $f(1) = 2$   $f(2) = 2$   $f(x) = f(x-1) + f(x-2)$

$$\begin{aligned} f(1) &= 2 \\ f(2) &= 2 \\ f(3) &= 4 \\ f(4) &= 6 \\ f(5) &= 10 \end{aligned}$$

$$\begin{aligned} f(3) &= f(3-1) + f(3-2) \\ f(3) &= f(2) + f(1) \\ &= 2 + 2 \end{aligned}$$