

Given the recursive equation, find the explicit equation.

Ex. 1:  $f(x) = f(x-1) + 2$ ;  $f(0) = -3$

Arith.

croc  
m.

when  $x=0$   
b

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

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

Ex. 2:  $f(x) = f(x-1) - 8$ ;  $f(-3) = 4$

Arith.  $y = -8x + -20$

$$y = mx + b$$

$$4 = (-8)(-3) + b$$

$$4 = 24 + b$$

$$-24 \quad -24$$

$$b = -20$$

$$y = -8x - 20$$

Given the explicit equation, find the recursive equation.

Ex. 3:  $f(x) = 4x + 9$  when  $x=0$

$$f(0) = 9$$

$$f(x) = f(x-1) + 4$$

Arithmetic  
for -

Ex. 4:  $f(x) = -4(x-2) + 3$

$$-4x + 8 + 3$$

$$f(x) = -4x + 11$$

$$f(0) = 11$$

$$f(x) = f(x-1) - 4$$

Given the recursive equation, find the explicit equation.

Ex. 5:  $f(x) = f(x-1) \cdot 4$ ;  $f(1) = -6$

$$f(x) = -6(4)^{x-1}$$

$$f(x) = -6(4)^{x-1}$$

Ex. 6:  $f(x) = 6f(x-1)$ ;  $f(-4) = -2$

$$f(x) = -2(6)^{x+4}$$

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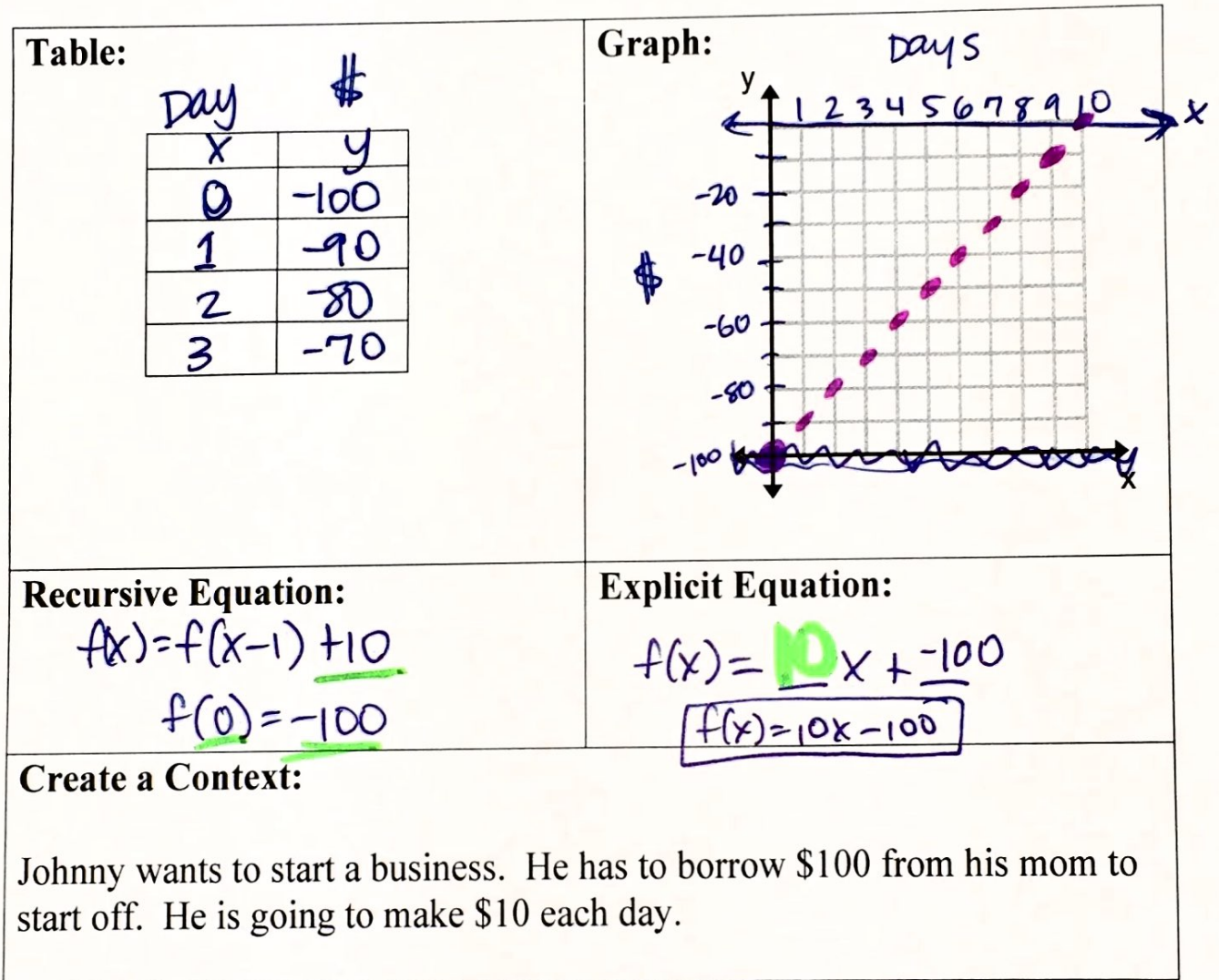
Given the explicit equation, find the recursive equation.

Ex. 7:  $f(x) = -2 \cdot \left(\frac{1}{7}\right)^{x-1}$       $f(1) = -2$   
 $f(x) = f(x-1) \cdot \frac{1}{7}$

Ex. 8:  $f(x) = 3(5)^{x-5}$       $f(5) = 3$   
 $f(x) = f(x-1) \cdot 5$



Ex. 9:



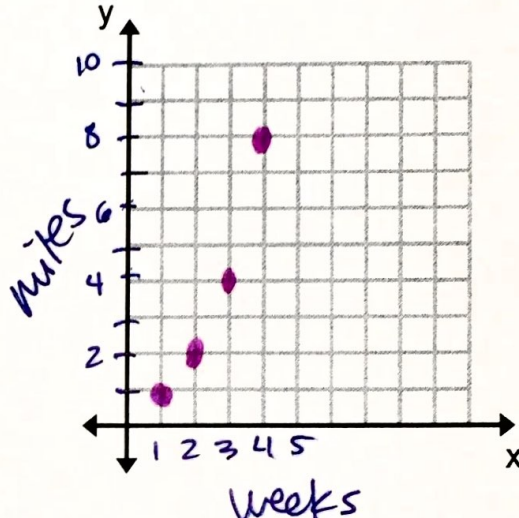
## Notes 3-5

Sec 1 H

Multiple Representations

Unit 3

Ex. 10:

<p><b>Table:</b></p> <p>weeks #of miles</p> <table border="1" data-bbox="343 705 630 974"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>2</td> <td>2</td> </tr> <tr> <td>3</td> <td>4</td> </tr> <tr> <td>4</td> <td>8</td> </tr> </tbody> </table>	x	y	1	1	2	2	3	4	4	8	<p><b>Graph:</b></p> 
x	y										
1	1										
2	2										
3	4										
4	8										
<p><b>Recursive Equation:</b></p> $f(1) = 1$ $f(x) = f(x-1) \cdot 2$	<p><b>Explicit Equation:</b></p> $f(x) = 1 \cdot (2)^{x-1}$ <div style="border: 1px solid black; padding: 2px; display: inline-block;"> <math>f(x) = 2^{x-1}</math> </div>										
<p><b>Create a Context:</b></p> <p>Scott decides to add running to his exercise routine and runs a total of one mile his first week. He plans to double the number of miles he runs each week.</p>											