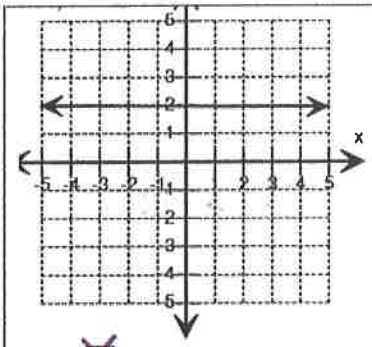
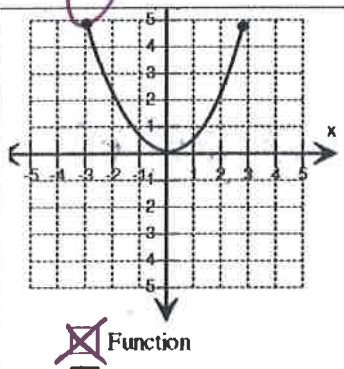
Practice 1 Key

Name _____ Date _____ Period _____

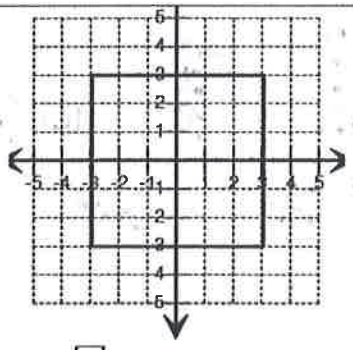
State whether each of the following representations is a function.



☒ Function
☐ Not a Function



☒ Function
☐ Not a Function



☐ Function
☒ Not a Function

x	y
2	6
3	10
4	2
5	6
6	10

yes this is OK!

x	y
1	6
3	10
1	6
3	10
2	19

yes

x	y
1	6
0	3
4	7
5	-1
6	-8

yes!

$f(1)=18$
$f(n) = f(n-1) + 6$ yes

$y = m(x - x_1) + y_1$ yes

$y=mx + b$ yes

almost all of the equations we use are functions except: $X=5$ or $X=-2$ Since it is a vertical line.

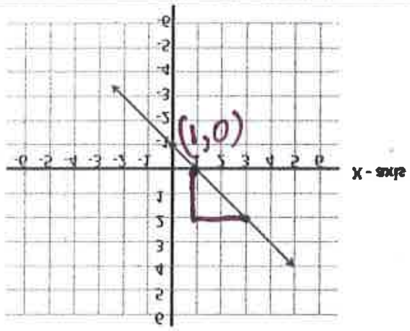
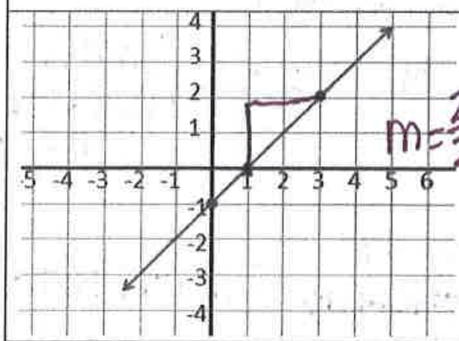
For each sequence, complete the required information.

Sequence	Arithmetic or Geometric	Common Ratio or Common difference	Recursive Equation	Explicit Equation
-17, -11, -5, 1, 7... (+6 +6 +6 +6)	Arithmetic	$d = 6$	$f(1) = -17$ $f(n) = f(n-1) + 6$	$f(n) = -17 + 6(n-1)$
13, 39, 117, 351... (×3 ×3 ×3)	Geometric	$r = 3$	$f(1) = 13$ $f(n) = f(n-1) \cdot 3$	$f(n) = 13(3)^{n-1}$
88, 44, 22, 11... (×½ ×½ ×½)	Geometric	$r = \frac{1}{2}$	$f(1) = 88$ $f(n) = f(n-1) \cdot \frac{1}{2}$	$f(n) = 88(\frac{1}{2})^{n-1}$
21, 34, 47, 60... (+13 +13 +13)	Arithmetic	$d = 13$	$f(1) = 21$ $f(n) = f(n-1) + 13$	$f(n) = 21 + 13(n-1)$

Key

Name ______________________ Date ______________________ Period ________

Write an equation in point slope form for each of the given representations.

<table>
<tr><th>Representation</th><th>Equation in Point Slope form y = m(x – x₁) + y₁</th><th>Equation in Slope Intercept Form y=mx + b</th></tr>
<tr><td>
<table>
<tr><th>x</th><th>f(x)</th></tr>
<tr><td>3</td><td>8</td></tr>
<tr><td>4</td><td>11</td></tr>
<tr><td>5</td><td>14</td></tr>
<tr><td>6</td><td>17</td></tr>
</table>
0, 1, 2   -1, 2, 5   +1   +3   m = 3/1
</td><td>y = 3(x − 3) + 8
y = 3x − 9 + 8
y = 3x − 1</td><td>y = 3x − 1</td></tr>
<tr><td>  </td><td>m = −2/2 = −1
y = −1(x − 1) + 0</td><td>y = −x + 1</td></tr>
<tr><td>
<table>
<tr><th>x</th><th>f(x)</th></tr>
<tr><td>-2</td><td>18</td></tr>
<tr><td>-1</td><td>10</td></tr>
<tr><td>0</td><td>2</td></tr>
<tr><td>1</td><td>-6</td></tr>
</table>
+1   +1   −8   −8   −8   m = −8
</td><td>y = −8(x + 2) + 18
y = −8(x + 1) + 10
y = −8(x) + 2
y = −8(x − 1) − 6</td><td>y = −8x + 2</td></tr>
<tr><td>  m = 2/2 = 1</td><td>y = 1(x − 1) + 0
y = 1(x − 3) + 2</td><td>y = x − 1</td></tr>
</table>

State the range of each function when the domain is given as D = {3,4,5,}

f(x) = 2x + 8

f(3) = 2(3) + 8   f(4) = 2(4) + 8
f(3) = 6 + 8   f(4) = 8 + 8
f(3) = 14   f(4) = 16
f(5) = 2(5) + 8
f(5) = 10 + 8
f(5) = 18

f(x) = 5ˣ

f(3) = 5^3 f(4) = 5^4
f(3) = 5·5·5   f(4) = 5·5·5·5
f(3) = 125   f(4) = 625
f(5) = 5·5·5·5·5
f(5) = 3125

f(x) = 3(2)ˣ

f(4) = $3 \cdot 2^3$ f(4) = $3 \cdot 2^4$
f(4) = 3·2·2·2   f(4) = 3·2·2·2·2
f(4) = 24   f(4) = 3·16
f(4) = 48
f(5) = $3 \cdot 2^5$
f(5) = 3·2·2·2·2·2
f(5) = 96