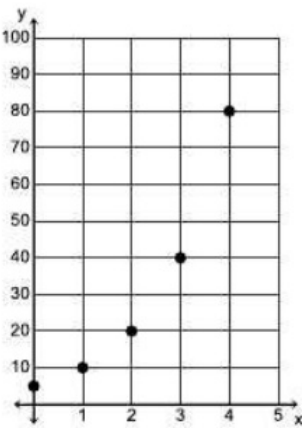


Directions: In each of the following problems, you are given one of the representations of a linear function. Complete the remaining 3 representations and answer the questions.

1.

<p><u>Context</u></p> <p>Jason bought a new car for \$12,000. Each year the value of the car goes down so that the value is $\frac{3}{4}$ of what it was the previous year.</p>	<p><u>Table</u></p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">x</th> <th style="padding: 5px;">y</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">0</td> <td style="text-align: center; padding: 5px;">12,000</td> </tr> <tr> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">9,000</td> </tr> <tr> <td style="text-align: center; padding: 5px;">2</td> <td style="text-align: center; padding: 5px;">6,750</td> </tr> <tr> <td style="text-align: center; padding: 5px;">3</td> <td style="text-align: center; padding: 5px;">5,062</td> </tr> <tr> <td style="text-align: center; padding: 5px;">4</td> <td style="text-align: center; padding: 5px;">3,796</td> </tr> <tr> <td style="text-align: center; padding: 5px;">5</td> <td style="text-align: center; padding: 5px;">2,847</td> </tr> </tbody> </table>	x	y	0	12,000	1	9,000	2	6,750	3	5,062	4	3,796	5	2,847	<p><u>Questions</u></p> <p>a) discrete or <u>continuous</u></p> <p>b) domain $[0, \dots, \infty)$</p> <p>c) range $[0, 12,000]$</p> <p>d) What is the value at $f(10)$? $= 12,000(0.75)^{10}$ $= 675$</p> <p>e) What is the value at $f(15)$? $= 12,000(0.75)^{15}$ $= 160$</p>
x	y															
0	12,000															
1	9,000															
2	6,750															
3	5,062															
4	3,796															
5	2,847															
<p><u>Graph</u></p>	<p><u>Starting Point (a):</u> 12,000</p> <p><u>Factor of Change (b):</u> $\frac{3}{4}$ or 0.75</p> <p><u>Equation:</u> $f(x) = 12,000(0.75)^x$</p>															

2.

Context	Table	Questions														
<p>Something with a shark!</p>	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> </tr> <tr> <td>1</td> <td>10</td> </tr> <tr> <td>2</td> <td>20</td> </tr> <tr> <td>3</td> <td>40</td> </tr> <tr> <td>4</td> <td>80</td> </tr> <tr> <td>5</td> <td></td> </tr> </tbody> </table> <p> $\frac{10}{5} = 2$ $\frac{20}{10} = 2$ $\frac{40}{20} = 2$ </p>	x	y	0	5	1	10	2	20	3	40	4	80	5		<p>a) discrete or continuous</p> <p>b) domain $\{0, 1, 2, 3, \dots\}$</p> <p>c) range $\{5, 10, 20, 40, \dots\}$</p> <p>d) What is the value at $f(7)$? $= 5 \cdot 2^7$</p> <p>$= 640$</p>
x	y															
0	5															
1	10															
2	20															
3	40															
4	80															
5																
<p><u>Graph</u></p> 	<p><u>Starting Point (a):</u></p> <p>5</p> <p><u>Factor of Change (b):</u></p> <p>2</p> <p><u>Equation:</u></p> <p>$f(x) = 5 \cdot 2^x$</p>	<p>e) What is the value at $f(11)$? $= 5 \cdot 2^{11}$</p> <p>$= 10240$</p>														

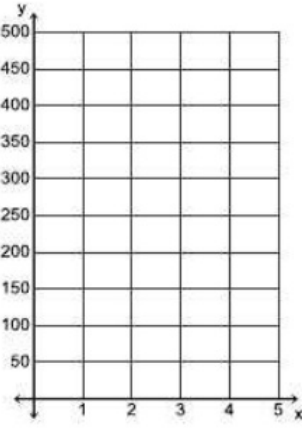
1. Evaluate using $f(x) = -3x + 5$ and $g(x) = 8\left(\frac{1}{2}\right)^x$

a) $f(-1) = -3(-1) + 5$
 $= 3 + 5$
 $= 8$ b) $g(-1)$ c) $\frac{f(-1)}{g(-1)}$

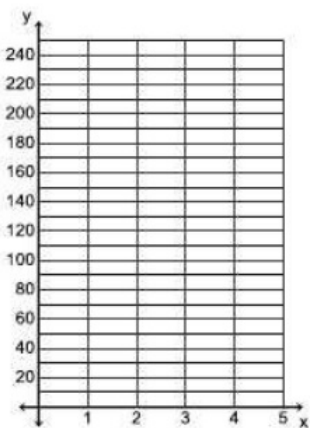
d) $f(2)$ e) $g(2)$ f) $f(2) + g(2)$

Directions: In each of the following problems, you are given one of the representations of a linear function. Complete the remaining 3 representations and answer the questions.

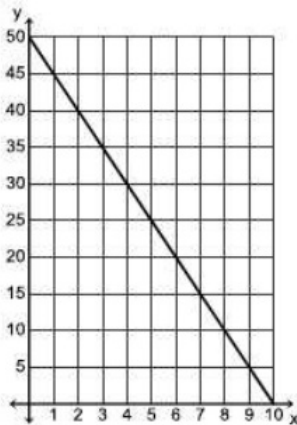
2.

<u>Context</u>	<u>Table</u>	<u>Questions</u>														
<p>There are 500 seals together in the ocean. A shark comes along and eats half the seals in a week. The next week he eats half of the remaining seals and so forth each week.</p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr><td style="width: 50px; height: 20px;"> </td><td style="width: 50px; height: 20px;"> </td></tr> <tr><td style="width: 50px; height: 20px;">0</td><td style="width: 50px; height: 20px;"> </td></tr> <tr><td style="width: 50px; height: 20px;">1</td><td style="width: 50px; height: 20px;"> </td></tr> <tr><td style="width: 50px; height: 20px;">2</td><td style="width: 50px; height: 20px;"> </td></tr> <tr><td style="width: 50px; height: 20px;">3</td><td style="width: 50px; height: 20px;"> </td></tr> <tr><td style="width: 50px; height: 20px;">4</td><td style="width: 50px; height: 20px;"> </td></tr> <tr><td style="width: 50px; height: 20px;">5</td><td style="width: 50px; height: 20px;"> </td></tr> </table>			0		1		2		3		4		5		<p>a) discrete or continuous</p> <p>b) domain</p> <p>c) range</p>
0																
1																
2																
3																
4																
5																
<p><u>Graph</u></p> 	<p><u>Starting Point (a):</u></p> <p><u>Factor of Change (b):</u></p> <p><u>Equation:</u></p>	<p>d) What is the value at $f(12)$?</p> <p>e) What is the value at $f(20)$?</p>														

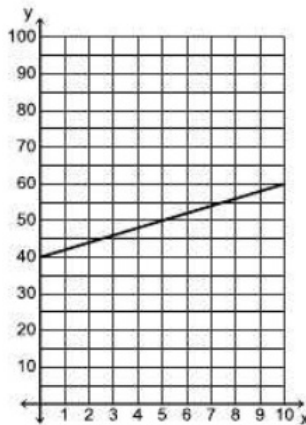
3.

<u>Context</u>	<u>Table</u>	<u>Questions</u>														
	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td style="width: 50px; height: 20px;"></td><td style="width: 50px; height: 20px;"></td></tr> <tr><td style="text-align: center;">0</td><td style="width: 50px; height: 20px;"></td></tr> <tr><td style="text-align: center;">1</td><td style="width: 50px; height: 20px;"></td></tr> <tr><td style="text-align: center;">2</td><td style="width: 50px; height: 20px;"></td></tr> <tr><td style="text-align: center;">3</td><td style="width: 50px; height: 20px;"></td></tr> <tr><td style="text-align: center;">4</td><td style="width: 50px; height: 20px;"></td></tr> <tr><td style="text-align: center;">5</td><td style="width: 50px; height: 20px;"></td></tr> </table>			0		1		2		3		4		5		<p>a) discrete or continuous</p> <p>b) domain</p> <p>c) range</p>
0																
1																
2																
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5																
<p><u>Graph</u></p> 	<p><u>Starting Point (a):</u></p> <p style="text-align: center;">2</p> <p><u>Factor of Change (b):</u></p> <p style="text-align: center;">3</p> <p><u>Equation:</u></p> <p style="text-align: center;">$f(x) = 2 \cdot 3^x$</p>	<p>d) What is the value at $f(8)$?</p> <p>e) What is the value at $f(11)$?</p>														

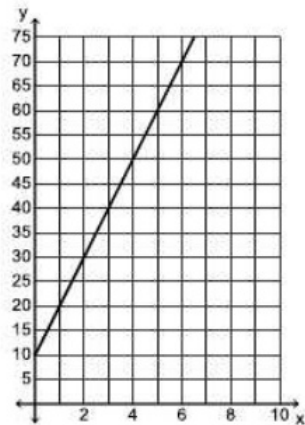
4. Find the slope and y-intercept of each line and then write the equation.



a)



b)



c)