Warmup

1) You are training for a marathon. You start running 3 miles a week and then each week increase it by 2 miles. Linear or exponential? What would be the domain? Write it in words and set notation.
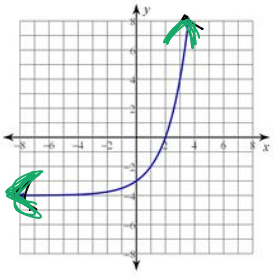
X-values – weeks

$\{1, 2, 3 \ldots \infty\}$

2) You have $4000 in an account that gains 5% interest every second of every minute for the rest of your life. Linear or exponential? What would be the domain? Write it in words, interval and inequality notation.

Secs / time

$[0, \infty)$ Interval

$0 \leq x < \infty$ Inequality

1. go on and on 4 eva	*Circle One*: Linear (Exponential) Neither *Circle One*: Discrete (Continuous) Connected Domain? $(-\infty, \infty)$ Interval $-\infty < x < \infty$ Inequality
2. $y = mx + b$ $y = 2x + 4$ $x \to$ line Function	*Circle One*: (Linear) Exponential Neither *Circle One*: Discrete (Continuous) Domain? $(-\infty, \infty)$ * All Real #'s $-\infty < x < \infty$
3. <table><tr><td>x</td><td>y</td></tr><tr><td>0</td><td>5</td></tr><tr><td>2</td><td>11</td></tr><tr><td>4</td><td>17</td></tr><tr><td>6</td><td>23</td></tr></table> $+2$ $+6$ $\frac{6}{2} = 3$ slope Equation: $y = 5 + 3x$	*Circle One*: Linear Exponential Neither *Circle One*: (Discrete) Continuous Domain? Set notation $\{0, 2, 4, 6\}$ Range $\{5, 11, 17, 23\}$ y
4. You invest $4,000 in a company and earn a 5% profit at the end of each year. $100 + 5 = 105/100$ one time a yrs YR x/y $4000(1.05)^x$ Equation: $4000(1.05)^x$	*Circle One*: Linear (Exponential) Neither *Circle One*: (Discrete) Continuous Domain? YRS $[0, 1, 2 \dots \infty)$ Inequality $0 \le x < \infty$
5. Joe has a jar of 300 Reece's pieces. Every hour he reaches in the jar and gets ten pieces and eats them quickly. -10 $\frac{300}{10}$ Equation: $y = 300 - 10x$	*Circle One*: (Linear) Exponential Neither *Circle One*: (Discrete) Continuous Domain? HRS $\{0, 1, 2 \dots 30\}$ Range candy $\{0, 10, 20 \dots 300\}$

6.

x	y
0	4
1	12
2	36
3	108

× 3
× 3
× 3

Equation: $y = 12(3)^{x-1}$

Circle One: Linear ~~Exponential~~ Neither
Circle One: ~~Discrete~~ Continuous

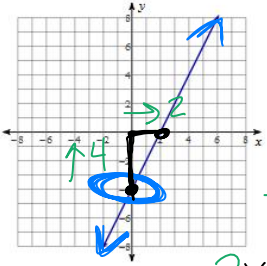Domain? $\{0,1,2,3\}$ Range $\{4,12,36,108\}$
*least to greatest

7.

Cashiers	Items scanned
1	20
2	40
3	60
4	80

+20
+20
+20
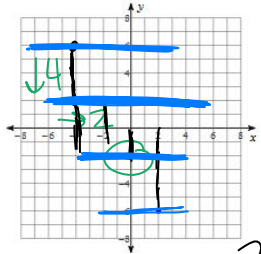
Equation: $y = 20x$ $20 + 20(n-1)$
$20 + 20n \cdot 20$

Circle One: ~~Linear~~ Exponential Neither
Circle One: ~~Discrete~~ Continuous

Domain? Cashiers $\{1,2,3,4\}$
Range: Items Scanned $\{20,40,60,80\}$

8.

go on
zero term
-4
$\frac{4}{2} = 2$ slope

Equation: $y = 2x - 4$
(hint: make a table from the points on the graph)

Circle One: ~~Linear~~ Exponential Neither
Circle One: Discrete ~~Continuous~~

Domain? $(-\infty, \infty)$
$-\infty < x < \infty$

9.

$\frac{-4}{2} = -2$
0 term
-2

Equation: $y = -2x - 2$
(hint: make a table from the points on the graph)

Circle One: ~~Linear~~ Exponential Neither
Circle One: ~~Discrete~~ Continuous

Domain? $\{-4, -2, 0, 2\}$
Range: $\{-6, -2, 2, 6\}$

10.

Year	Profit
0	100
1	200
2	400
3	800

×2
×2
×2

Equation: $y = 200(2)^{x-1}$
↓ 1st term

Circle One: Linear ~~Exponential~~ Neither
Circle One: ~~Discrete~~ Continuous

Domain? Year $\{0,1,2,3\}$