

#21-24 EOC

21) What is the average rate of change in weight of the plankton from week 8 to week 12?

$$\begin{matrix} (8, 0.04) & (12, 0.49) \\ x_1 & y_1 & x_2 & y_2 \end{matrix}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{0.49 - 0.04}{12 - 8} = \frac{.45}{4} = \boxed{0.1125 \text{ per week}}$$

22)

$$f(x) = 3x + 5$$

↑
y-intercept

g(x)

x	g(x)
-7	2
-5	3
-3	4
-1	5

$$(-7, 2) \quad (-5, 3)$$

$$\begin{matrix} x_1 & y_1 & x_2 & y_2 & m \\ \frac{y_2 - y_1}{x_2 - x_1} & = & \frac{3 - 2}{-5 - (-7)} & = & \frac{1}{2} \end{matrix}$$

* pick a point & plug into

$$y = mx + b \text{ to find } b.$$

$$y = \frac{1}{2}x + b$$

$$3 = \frac{1}{2}(-1) + b$$

$$5 = -\frac{1}{2} + b$$

$$\begin{array}{r} +\frac{1}{2} \quad +\frac{1}{2} \\ \hline 5.5 = b \text{ (y-intercept)} \end{array}$$

Difference = subtract

$$g(x) - f(x)$$

$$5.5 - 5 = \boxed{0.5}$$

23

Company Y
 $y = .10x + 10$
 ↑
 minutes

Company Z
 $y = .20x$

$$y = .10x + 10 - .20x$$

$$= -.10x + 10$$

(B)

24

Time	Method 1	Method 2
0	0	1.5
1	5	3
2	11	6
3	15	12
4	19	24
5	25	48

Not constant exponential

Multiplication or division =

Exponential

(D)