**Using Tables with Linear Growth**

**Example 1:** (class notes before problems #1 and #2 on the assignment)

\_\_\_\_\_\_\_\_\_\_\_ begins with 10 pennies and adds 5 pennies each day.

**Create a table to represent the number of pennies**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Days** | 0 | 1 | 2 | 3 | 4 |  |  |  |
| # of pennies | 10 | 15 | 20 | 25 | 30 |  |  |  |

**a)** Determine the rate of change of the **number of pennies** vs.  **number of days**

=

*change in* **Pennies**

*change in*  **Days**

**b)** How many pennies did \_\_\_\_\_\_\_\_\_\_\_ have initially (in the beginning) ?

**c)** Write an equation to find the number of pennies on any given day. (*y* = m*x* + b format)

y = number of pennies

x = days

m = rate of change (slope)

b = initial (beginning) number of pennies

**d)** Using the equation found in part ***c)*** how many pennies will \_\_\_\_\_\_ have on day 12?

**e)** Draw a graph to represent the number of pennies on any given day

(label the *x* and *y* axes)



****

**f)** What does the *y*-intercept tell you?

**Example 2:** (class notes before problems **#1** and **#2** on the assignment)

**The table represents the number of pennies that \_\_\_\_\_\_\_\_\_\_ collected in**

**his/her penny jar.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Days** |  |  |  | 9 | 12 | 15 |  |  |
| # of pennies |  |  |  | 80 | 90 | 100 |  |  |

**a)** Determine the rate of change of the **number of pennies** vs.  **number of days**

=

*change in* **Pennies**

*change in*  **Days**

**b)** How many pennies did \_\_\_\_\_\_\_\_\_\_\_ have initially (in the beginning) ?

**c)** Write an equation to find the number of pennies on any given day. (*y* = m*x* + b format)

y = number of pennies

x = days

m = rate of change (slope)

b = initial (beginning) number of pennies

**d)** Using the equation found in part **c)** how many pennies will \_\_\_\_\_\_ have on day 30?

**e)** Draw a graph to represent the number of pennies on any given day

(label the *x* and *y* axes)



**f)** What does the *y*-intercept tell you?

**Example 3:** (class notes before problems ***#3*** and ***#4*** on the assignment)

**The table represents the number of pennies that \_\_\_\_\_\_\_\_\_\_ collected in**

**his/her penny jar, then his/her little brother/sister began sneaking the pennies out of the jar.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Days** |  |  |  | 20 | 25 | 30 |  |  |
| # of pennies |  |  |  | 300 | 250 | 200 |  |  |

**a)** Determine the rate of change of the **number of pennies** vs.  **number of days**

=

*change in* **Pennies**

*change in*  **Days**

**b)** How many pennies did \_\_\_\_\_\_\_\_\_\_\_ have initially (in the beginning) ?

**c)** Write an equation to find the number of pennies on any given day. (*y* = m*x* + b format)

y = number of pennies

x = days

m = rate of change (slope)

b = initial (beginning) number of pennies

**d)** Using the equation found in part **c)** how many pennies will \_\_\_\_\_\_ have on day 45?

**e)** Draw a graph to represent the number of pennies on any given day

(label the *x* and *y* axes)



**f)** What does the *y*-intercept tell you?

**g)** What does the *x*-intercept tell you?

Assignment

Name: .

Period: Date: .

**Using Tables to Make Predictions**

**1. Cost to Prepare Pizzas**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pizza Prepared** |  | 1 | 2 | 3 | 4 |  |  |  |
| Cost |  | $12.00 | $15.00 | $18.00 | $21.00 |  |  |  |

Alfy has a pizza stand. Based on the table, what would be the cost of preparing more pizzas?

**a)** What would be the cost of preparing 5 pizzas?

**b)** What would be the cost of preparing 7 pizzas?

**c)** What did it cost to set-up the pizza stand? ( cost of preparing **0** pizzas)

**d)** Determine the rate of change of the **Cost** vs.  **Number of Pizzas prepared**

=

*change in* **Cost**

*change in*  **Number of Pizzas**

**e)** Write an equation to find the cost of preparing more pizzas.

**f)** Using the equation found in part **e)** what would be the cost of preparing 20 pizzas?

**g)** What would be the cost of preparing 50 pizzas?

**h)** Draw a graph to represent the Cost of Preparing Pizzas (label the *x* and *y* axes)

**i)** What does the *y*-intercept tell you?

**2. Cost of Cell Phone based on Minutes**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Minutes Used** |  |  |  | 15 | 20 | 25 | 30 |  |
| **Cost** |  |  |  | $30 | $34 | $38 | $42 |  |

**a)** How much would 45 minutes cost?

**b)** How much is the cost of having a cell phone *without* using any minutes ?

**c)** Determine the rate of change of the **Cost** vs. **Minutes Used**

=

*change in* **Cost of Cell Phone**

*change in*  **Minutes Used**

**d)** Write an equation to find the cost of the cell phone for any number of given minutes.

**e)** Using the equation found in part **d)** how much would 115 minutes cost ?

**f)** How much would 145 minutes cost?

**g)** Draw a graph to represent the Cost of a Cell Phone (label the *x* and *y* axes)

**h)** What does the *y*-intercept tell you?

3. **Amount of Water Available in a Tank**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Day** |  |  | 2 | 3 | 4 | 5 |  |
| **Water**  **(gallons)** |  |  | 150 | 125 | 100 | 75 |  |

If the amount of water in a tank continues to decrease at the rate shown in the chart.

**a)** On which day will the tank have 25 gallons left?

**b)** How much water did the tank start with before the tank began to drain ?

**c)** Determine the rate of change of the **Gallons of Water** vs. **Days**

=

*change in* **Gallons of Water**

*change in*  **Days**

**d)** Write an equation to represent the gallons of water in the tank at any time.

**e)** Using the equation found in part **d)** how many gallons will the tank contain on day 7 ?

**f)** Draw a graph to represent the Water Available in the Tank (label the *x* and *y* axes)

**g)** What does the *x*-intercept tell you?

**4. Gas Remaining in Tank (based on miles)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Miles Driven |  | 25 | 50 | 75 |  |
| Gas  Remaining  (in gallons) |  | 18 | 16 | 14 |  |

**a)** How much gas is left after driving 125 miles?

**b)** How much gas was in the tank before driving?

**c)** Write an equation to represent the number of gallons of water in the tank.

**d)** How much gas is left after driving 250 miles?

**e)** Draw a graph to represent the Gas Remaining in the Tank (label the *x* and *y* axes)

**f)** What does the *x*-intercept tell you?

**5a. Make-up your own problem**

**(you can work with *1 or 2* other students on this problem)**

**(each student must write on his/her own sheet)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| ( ) |  |  |  |  |  |

**a)** How much \_\_\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_\_\_\_\_\_?

**b)** How much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the beginning?

**c)** Write an equation to represent the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**d)** How much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ was remaining ?

**e)** Draw a graph to represent the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (label the *x* and *y* axes)

**f)** What does the *x*-intercept  *(and/or the y-intercept)* tell you?

**5b. ANSWER KEY for your problem**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| ( ) |  |  |  |  |  |

**a)** How much \_\_\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_\_\_\_\_\_?

**b)** How much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the beginning?

**c)** Write an equation to represent the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**d)** How much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ was remaining ?

**e)** Draw a graph to represent the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (label the *x* and *y* axes)

**f)** What does the *x*-intercept  *(and/or the y-intercept)* tell you?