*Comparing Rate of Change*  Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_

The cost for text messaging varies from company to company and from plan to plan. A plan that suits one person may not be beneficial to another. Explore the pricing and the rate of change in each of the following plans.

A. Unlimited plan

B. Pay-per-use plan

C. Plan with 750 messages

Use the Plan Description to complete the tables (see the example below) and to plot the data points on the grid to the right of each table. Connect the points with appropriate line(s).

**Example:** A plan with 300 text messages

Plan Description: $6 per month with 300 text messages; additional fee of $.05 for each message

over the 300 limit

|  |  |
| --- | --- |
| **Texts sent** | **Plan Cost** |
| **100 Texts** | **$6.00** |
| **300 Texts** | **$6.00** |
| **500 Texts** | **$16.00** |
| **700 Texts** | **$26.00** |
| **900 Texts** | **$36.00** |

**Unlimited Plan**

|  |  |
| --- | --- |
| Texts Sent | Cost |
| 0 |  |
| 200 |  |
| 400 |  |
| 600 |  |
| 800 |  |
| 1000 |  |
| 1200 |  |
| 1400 |  |
| 1600 |  |
| 1800 |  |
| 2000 |  |

Plan Description: $25 per month, regardless of the number of text messages

**Pay-Per-Use Plan**

|  |  |
| --- | --- |
| Texts Sent | Cost |
| 0 |  |
| 200 |  |
| 400 |  |
| 600 |  |
| 800 |  |
| 1000 |  |
| 1200 |  |
| 1400 |  |
| 1600 |  |
| 1800 |  |
| 2000 |  |

Plan Description: $.05 per text message, billed monthly

**150 Included Plan**

Plan Description: $6.50 per month with 150 text messages; an additional fee of $.01 for each message

|  |  |
| --- | --- |
| Texts Sent | Cost |
| 0 |  |
| 200 |  |
| 400 |  |
| 600 |  |
| 800 |  |
| 1000 |  |
| 1200 |  |
| 1400 |  |
| 1600 |  |
| 1800 |  |
| 2000 |  |

over the 150 limit

**Calculate the slope of the line for each plan. Explain the meaning of the slope in terms of number of text messages and total cost in dollars.**

Plan A:

Plan B:

Plan C:

**Determine the *y*-intercept and state what the intercept represents for each plan.**

Plan A:

Plan B:

Plan C:

**Using the charts you created and the rate of change, explain when someone might purchase each plan.**

Plan A:

Plan B:

Plan C: