1. On Penny’s 15th birthday, her grandmother gave her a larger jar of quarters. Penny decided to continue to

Save quarters in the jar. Every few months she counts her quarters and records the number a table like this one. Predict how many quarters she’ll have on her 18th birthday.

**Penny’s Savings**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Number of months** | **3** | **5** | **8** | **12** | **15** | **19** | **22** | **26** |
| **Number of quarters** | **239** | **293** |  | **482** |  | **671** |  |  |

 a) Fill in the table above with the missing number of quarters.

 b) Identify the independent variable. Identify the dependent variable.

 c) Does Penny’s saving of quarters appear to be a linear function of the number of months

 she has saved? Explain your reasoning.

 d) Graph the data.

 d) Find the slope of the data and explain the real-world meaning of the slope as related to

 the data described in the table.

 e) ) Write a NOW-NEXT rule to show how the number of quarters Penny saves changes with

 each month she saves.

 f) Use the slope you found in 1d to write an equation of the form *y = mx + b*.

 g) What is the real-world meaning of the *y-intercept?*

h) Use your equation to predict how many quarters Penny will have on her 18th birthday.

1. On Penny’s 15th birthday, her grandmother gave her a larger jar of quarters. Penny decided to continue to

Save quarters in the jar. Every few months she counts her quarters and records the number a table like this one. Predict how many quarters she’ll have on her 18th birthday.

**Penny’s Savings**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Number of months** | **3** | **5** | **8** | **12** | **15** | **19** | **22** | **26** |
| **Number of quarters** | **239** | **293** | **374** | **482** | **563** | **671** | **752** | **860** |

 a) Fill in the table above with the missing number of quarters.

 b) Identify the independent variable. Identify the dependent variable.

 Independent variable is the months; dependent variable is number of quarters

 c) Does Penny’s saving of quarters appear to be a linear function of the number of months

 she has saved? Explain your reasoning.

 Yes, the number of quarters seems to be going up in a steady rate of change.

 d) Graph the data.

 d) Find the slope of the data and explain the real-world meaning of the slope as related to

 the data described in the table.

 The slope is 27; this means that each month, Penny increases the number of

 quarters in her jar by 27.

 e) ) Write a NOW-NEXT rule to show how the number of quarters Penny saves changes with

 each month she saves.

 NEXT = Now + 27; starting at 158

 f) Use the slope you found in 1d to write an equation of the form *y = mx + b*.

 y = 27x + 158

 g) What is the real-world meaning of the *y-intercept?*

 There were 158 quarters in the jar when her grandmother gave her the jar.

h) Use your equation to predict how many quarters Penny will have on her 18th birthday.

 Penny would have 2012 quarters on her 18th birthday.