1. The Riverside Adventure Skydiving Club is planning a spring skydiving lesson and first jump.

Through the club newsletter, club members were asked to take a poll as to whether or not they would purchase a video of their jump for various prices.

The result s of the poll are shown in the table below:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Cost** (in dollars) | **25** | **30** | **35** | **40** | **50** | **60** | **75** |
| **Number of Buyers** | **93** | **89** | **77** | **71** | **64** | **55** | **38** |

1. Create a linear model for the (*cost, number of buyers)* data. Represent your linear model

as a graph and as a function rule.

1. Use your linear model from Part a to predict the number of members who would purchase a video of their jump for $45. For $70. For $90. For $10. Which estimates would you most trust? Why?
2. Should you use your model to predict the number of buyers if videos cost $125? Why or why not?
3. For what cost of a video would you predict 50 buyers? 75 buyers? 100 buyers?
4. When Robin and Mike had to find a linear function with graph passing through the two points A(-3, 12) and Q(4, -2), they produced the following work.

**The rule will be in the form y = mx + b**

**The slope of the line is -2 (1)**

**So, y = -2x + b (2)**

**Since A(-3, 12) is on the line, 12 = -2(-3) + b (3)**

**So 6 = b (4)**

**So, the rule is y = -2x + 6 (5)**

1. Did Robin and Mike find the correct function rule? If so, what do you think their reasoning was for each step?If not, where did they make an error?
2. Use reasoning similar to that of Robin and Mike to find a function rule for the line through the points (-2, 2) and (6, 10).
3. Use similar reasoning to find a functionrule for the line through the points (3, 5) and

(8, -15).