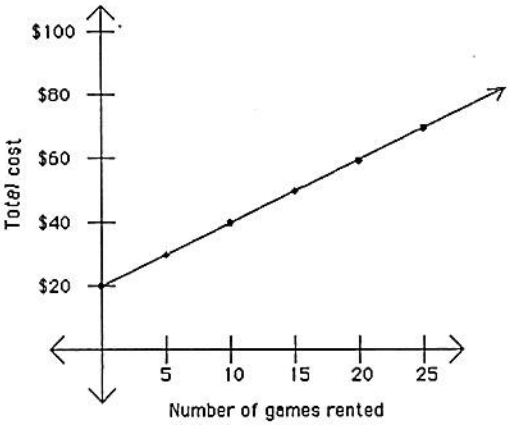
The TAKEAWAY

We can represent linear relationships displayed on a graph symbolically by identifying the y-intercept and calculating the rate of change.

Algebra HW #

1) The graph pictured below represents the total cost of renting video games from a video game store that specializes in renting vintage video games that uses vintage systems such as Atari and Nintendo. Any person wishing to rent a video game must acquire a membership from the store.



a) Write an equation that represents the linear relationship. Explain the meaning of the rate of change and the y-intercept.

(0,20) (10,40)

m: $\frac{\Delta y}{\Delta x} = \frac{40-20}{10-0} = \frac{20}{10} \rightarrow \frac{\$2}{1 \text{ game}}$

$y = 2x + 20$

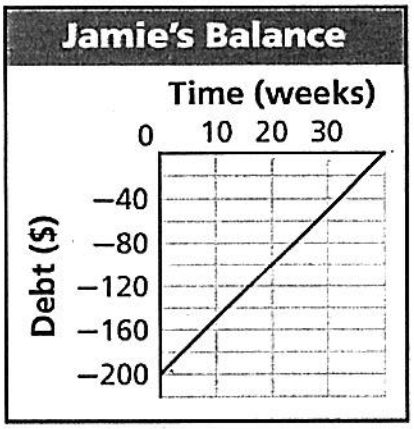
The rental cost is $2 per game.

b: 20 → The initial membership fee is $20.

b) In this graph, the points are connected to form a line. Do you think it makes sense to connect the points? Explain.

No, because part of a video game cannot be rented.

2) Analyze the graph below and complete a - c.



a) Identify the y - intercept. What does it represent?

b: -200 Jamie's loan is $200 before she begins repayment.

b) Identify the x-intercept. What does it represent?

x-intercept: 40 It takes Jamie 40 weeks to repay the loan.

c) Using the intercepts, write an equation that represents the linear relationship. Explain the meaning of the rate of change.

(0,-200) (40,0)

m: $\frac{\Delta y}{\Delta x} = \frac{-200-0}{0-40} = \frac{-200}{-40} = \frac{\$5}{1 \text{ wk}}$ → Jamie repays her loan $5 per week.

$y = 5x - 200$