

TAKEAWAY

We can represent linear relationships displayed on a graph symbolically by identifying the

y-intercept and calculating the rate of change.

8 Algebra CC

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.

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

$y = 2x + 20$

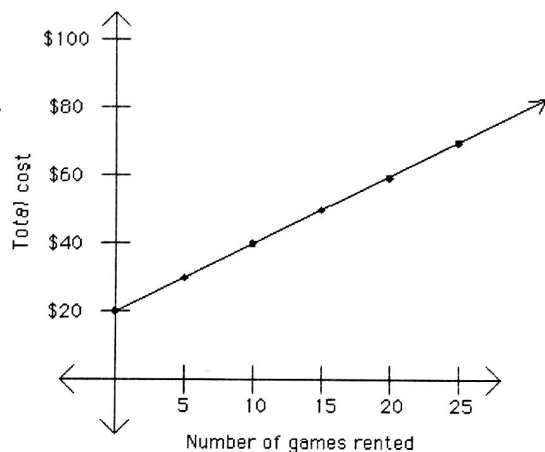
The rental cost is \$2 per game.

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.



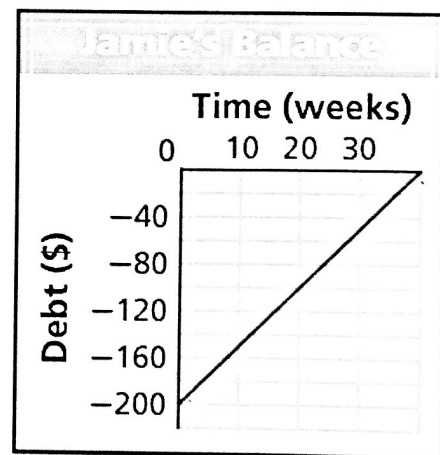
- 2) Analyze the graph below and complete a - c.

- 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.

$(0, -200)$
 $(40, 0)$
 $m: \frac{\Delta y}{\Delta x} = \frac{-200 - 0}{0 - 40}$
 $= \frac{-200}{-40}$
 $= \frac{\$5}{1 \text{ wk}}$

$y = 5x - 200$

Jamie repays her loan \$5 per week.