

Algebra IA
Unit 4 Worksheet 8

Interpreting slope and y-intercept – Part 2 Name _____

1. The function below shows the cost of a hamburger with different numbers of toppings (t).

$$f(t) = 1.90 + 1.40t$$

t - # of toppings

f(t) - total cost

a. What is the y-intercept, and what does it mean?

\$1.90, the initial cost of hamburger w/ no toppings

b. What is the slope, and what does it mean?

\$1.40, the cost per topping

c. If Jodi paid \$3.30 for a hamburger, how many toppings were on Jodi's hamburger?

total paid →

$$\begin{array}{r|l} 3.30 & = 1.90 + 1.40t \\ -1.90 & \\ \hline 1.4 & = 1.4t \\ \hline 1.4 & \\ \hline & 1.4 \end{array}$$

$$t = 1$$

1 topping

2. The function below shows the cost of an ice cream sundae with different numbers of toppings (t).

$$f(t) = 2.25 + 0.75t$$

t - # toppings

f(t) = total cost

a. What is the y-intercept, and what does it mean?

\$2.25, cost of sundae w/ no toppings

b. What is the slope, and what does it mean?

\$0.75, cost per topping

c. If Kaye paid \$6.00 for a sundae, how many toppings were on Kaye's sundae?

total cost →

$$\begin{array}{r|l} 6 & = 2.25 + 0.75t \\ -2.25 & \\ \hline 3.75 & = 0.75t \\ \hline 0.75 & \\ \hline & 0.75 \end{array}$$

$$t = 5$$

5 toppings

3. The function below shows the cost to attend the fair if you ride r rides.

$$f(r) = 5 + 1.75r$$

r - # of rides
 $f(r)$ - total cost at the fair

a. What is the y-intercept, and what does it mean?

5, initial cost to attend fair

b. What is the slope, and what does it mean?

1.75, cost per ride

c. If Al spent \$19.00 at the fair, how many rides did Al ride?

$$\begin{array}{r|l} 19 = 5 + 1.75r & \\ -5 & -5 \\ \hline 14 = 1.75r & \\ \hline 1.75 & 1.75 \end{array}$$

$$r = 8$$

8 rides

4. The function below shows the cost for Mrs. Franklin to go to a buffet with c of her grandchildren.

$$f(c) = 6.85 + 2.95c$$

c - # of grandkids
 $f(c)$ - cost to go to buffet

a. What is the y-intercept, and what does it mean?

6.85, initial cost to get into buffet

b. What is the slope, and what does it mean?

2.95, cost per grandkid to eat at buffet

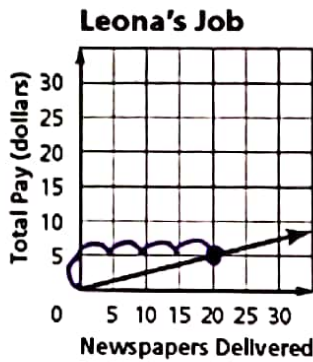
c. If Mrs. Franklin paid 18.65 for the buffet, how many of her grandchildren did she take to the buffet?

$$\begin{array}{r|l} 18.65 = 6.85 + 2.95c & \\ -6.85 & -6.85 \\ \hline 11.8 = 2.95c & \\ \hline 2.95 & 2.95 \end{array}$$

$$4 = c$$

4 grandkids

5. The graph below shows the number of newspapers delivered and total pay for Leona's newspaper delivery job. What does the slope of this graph represent?



$$\frac{\Delta y}{\Delta x} = \frac{5}{20} = \frac{1}{4} = \frac{\$}{\# \text{ N.P.}}$$

\$1 for every 4 newspapers delivered.

6. Dionne pays a fixed fee plus an hourly rate to rent a boat. The table below shows how much Dionne paid for the boat. What was Dionne's hourly rate to rent the boat?

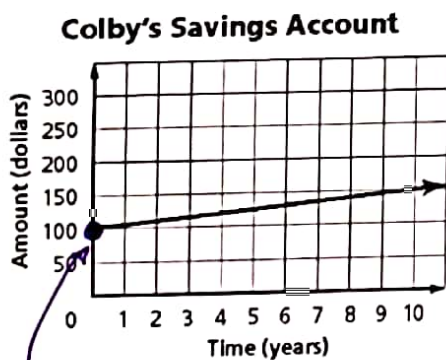
Dionne's Boat Rental					
Hours Rented	1	2	3	4	5
Amount Paid	\$27	\$39	\$51	\$63	\$75

+12 +12 +12 +12

$$\frac{\Delta y}{\Delta x} = \frac{12}{1} = \frac{\$}{\text{hours}}$$

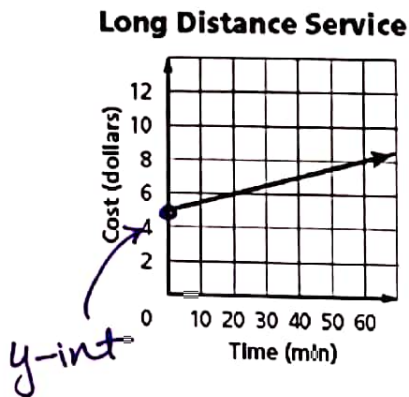
\$12 per hour

7. Colby put \$100 in a savings account. The graph below shows how the amount in the account would increase over the next ten years. What does the y-intercept represent?



(initial) input
\$100 put into
the savings
account

8. Tara pays a base rate for her long distance phone service plus a per-minute charge. The graph below shows what she would pay for her long distance phone service for the first 60 minutes. What does the y-intercept of this graph represent?



(base)
initial cost for the
long distance phone service

9. Rich is a member of a gym. He pays a $\frac{10}{\text{monthly fee}}$ plus a $\frac{3x}{\text{per-visit fee}}$. The equation below represents the monthly amount Rich pays for his membership to the gym per month for x visits.

$$y = 3x + 10$$

What does the y-intercept of the graph of this equation represent?

monthly fee

10. Nan works as a commissioned sale rep. She makes a weekly base salary plus a commission for each sale she makes. The table below shows how much Nan can make. What is Nan's weekly base salary?

Nan's Weekly Salary					
Sales Made	1	2	3	4	5
Salary	\$250	\$300	\$350	\$400	\$450

$-50 + 50 + 50$

base salary \$200