On the Job 2

Model a Direct Variation Relationship With a Graph

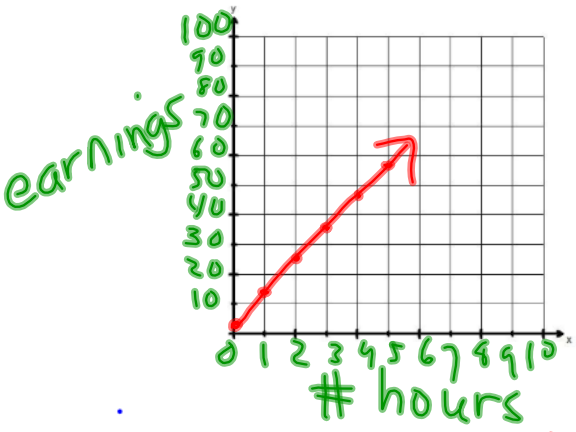
Kelly works part-time at an ice cream shop. She writes down her hours and her earnings for each of her first four weeks on the job.

	Number of Hours	Money Earned
Week 1	12	$132
Week 2	8	$88
Week 3	17	$187
Week 4	15	$165

a) What is Kelly's hourly rate of pay?

$11 per hour

b) Create a scatter plot of the data. Describe the pattern of the points.



x	y
0	0
1	11
2	22
3	33
4	44
5	55

Pattern: linear, rate $11

c) Do you think it is reasonable to draw a straight line through the points to connect them and to represent the relationship? Why? If it is reasonable, draw the line.

Yes, because she is paid for part of an hour

If the data is continuous then we can join the points with a solid line. If the data is discrete then we can use a dashed line to join the points. This means that the values between the plotted points are not valid.

d) What are the slope and y-intercept of the graph?

Slope = 11 y-int: 0

e) Use the graph to estimate how many hours Kelly would have to work to earn $200.

200 ÷ 11 = 18.2 hours

f) Explain how the graph shows that the relationship between number of hours worked and earnings is a direct variation.

Starts at 0,0 and has a constant rate

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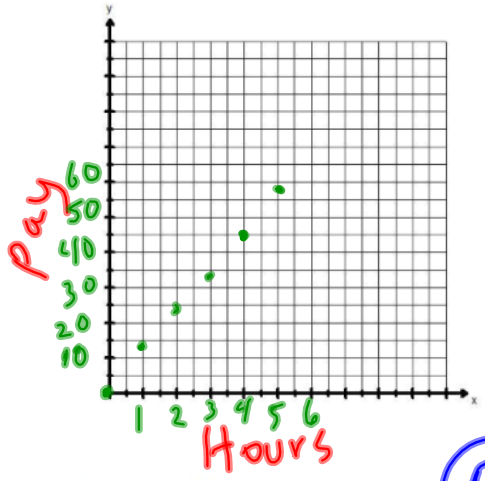
Worksheet 9

After three months at the ice cream shop, Kelly receives a pay raise to $11.50/h. However, from now on, all employees will be scheduled to work for only whole numbers of hours.

a) Create a scatter plot using Kelly's new rate of pay for 0 h to 17 h of work.

Hours	Pay
0	0
1	11.50
2	23
3	34.50
4	46
5	57.50



b) Explain why you cannot draw a solid or dashed line through the points.

Because she don't get paid for part of an hour

c) What are the slope and y-intercept of the graph?

Slope = 11.50 y-int : 0

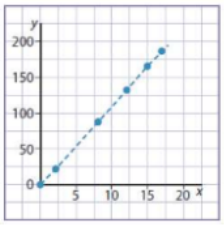
yesbuhy

d) Use the graph to estimate how many hours Kelly would have to work to earn $200.

Worksheet #10

1. Which graphs represent a direct variation relationship? How do you know?

A



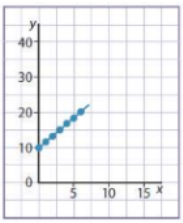
Yes_____ No_____

Why?

_____

_____

B



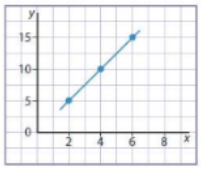
Yes_____ No_____

Why?

_____

_____

C



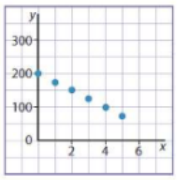
Yes_____ No_____

Why?

_____

_____

D



Yes_____ No_____

Why?

_____

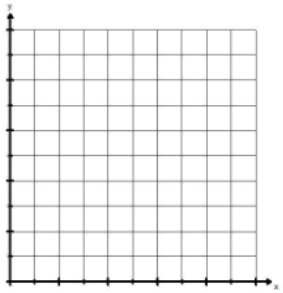
_____

2. Sam earns $8/h babysitting.

a) Create a table of values to show his total earnings for 0 h to 5 h of babysitting.

b) What is the rate of change?

c) Graph the relationship between Sam's total earnings and the number of hours of babysitting.



d) Is it reasonable to draw a solid line from the origin to connect the points? Explain your thinking.

e) What are the slope and y-intercept of the graph?

f) Use the graph to estimate how many hours Sam has to babysit to earn \$20.

g) Suppose he earned \$9/h. How would the graph compare to the one in part c)?

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