

Comparing Graphs

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Summary	Students are given an hourly rate of pay and infer coordinates for (h, \$) over a range of hours. They produce a table and a graph of work-pay. Then they produce another graph for another rate of pay and discuss differences in time and pay.
Goals	1. To allow students to develop a better understanding of the spatial relationships in the Cartesian space.
Materials	Overheads, Handouts
Keywords	Compare/Contrast Functions Contextualized Situations Full Class Discussion Interpretation of Stories Linear Functions Production of Graphs Production of Tables

Activity Plan:

1. Making a Graph [Whole Class]

Show the overhead on Page 1. Refer to the ordinate (x axis) as the **hours (number) line**. Refer to the abscissa (y axis) as the **pay (number) line**.

Draw a table on the blackboard and label column 1 "Time in Hours" and column 2 "Earnings in \$".

Present the following "straightforward" problem:

Marisa earns **\$3.00 per hour**. Marisa actually worked over 20 hours but we want to show what she earned at various points in time.

Ask a student to name a point that Marisa "passed through".

Ask the student to add the point to the table on the blackboard.

Ask the same student to show, with a pointer, where that point will lie on the projected Cartesian space (on Page 1's overhead).

Draw in the point on the overhead (Page 1).

Because of the way the graph is set up, only the first 5 hours of work can be shown.

Discuss the points and connect the dots when students note that they go in a pattern or in a straight line.

2. A Second Graph [Whole Class]

Mention that Andres earned **two dollars every two hours**.

Ask the students to fill in the table and to plot the points as we did before on the overhead on Page 1 (as we did for Marisa's earnings).

3. Comparing the Two Graphs [Whole Class]

Discuss the following questions:

1. Was there any place where the graphs meet?
2. How much did Marisa get for 5 hours work? How about Andres?
3. How long did it take Marisa to earn 9 dollars? How long did it take Andres?
4. What is the difference in how much they had to work to earn \$9? [it took Andres six hours more work]
5. Where are those six hours, where is that difference in work time, on the drawing?

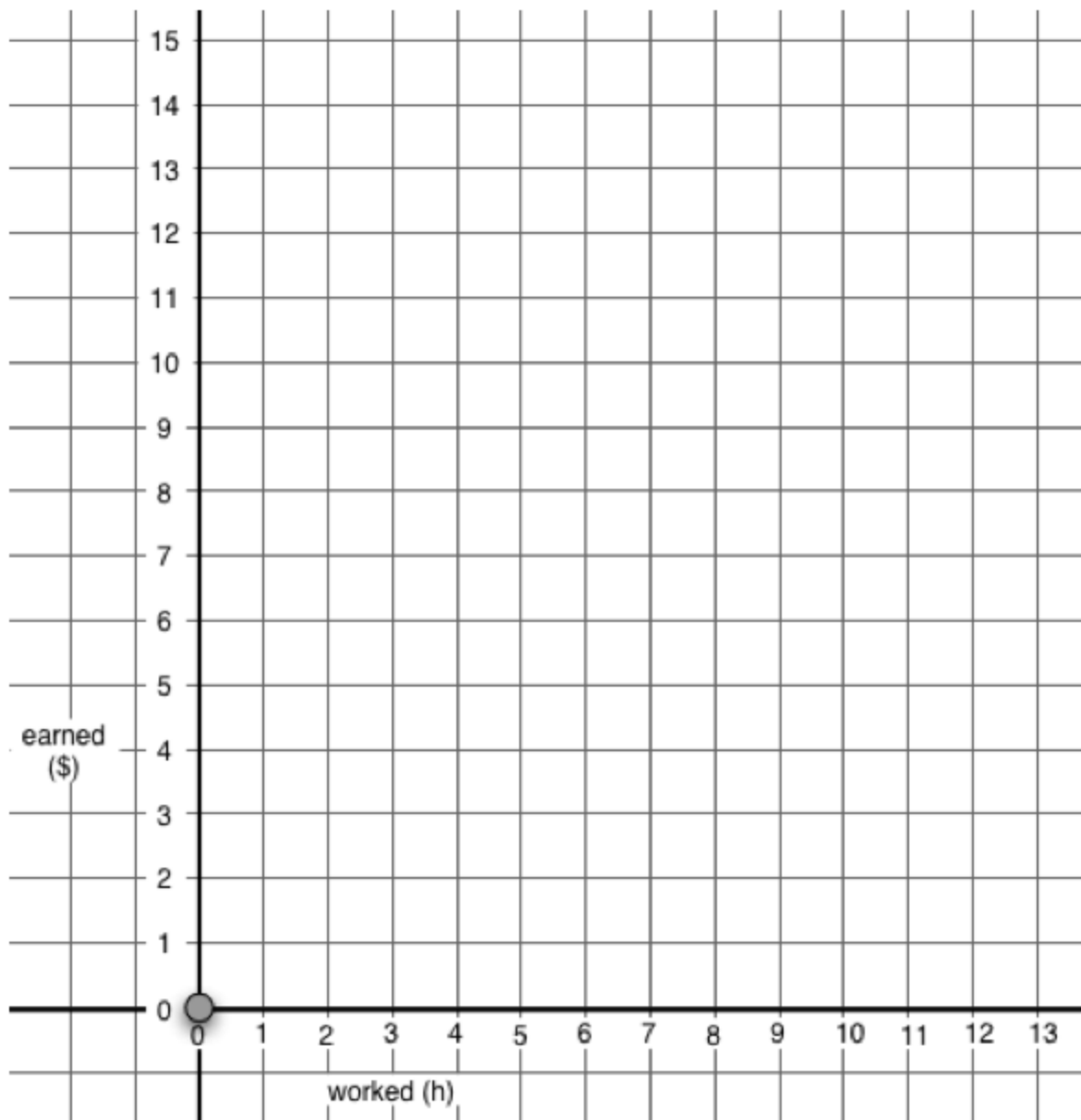
4. Homework (Page 2)

The homework is similar to the classroom work, with a different final question.

Overhead: Making a Graph

(Page 1)

Lisette earns three dollars per hour. Make a graph below.
Andres earns two dollars every two hours. Make a graph below.

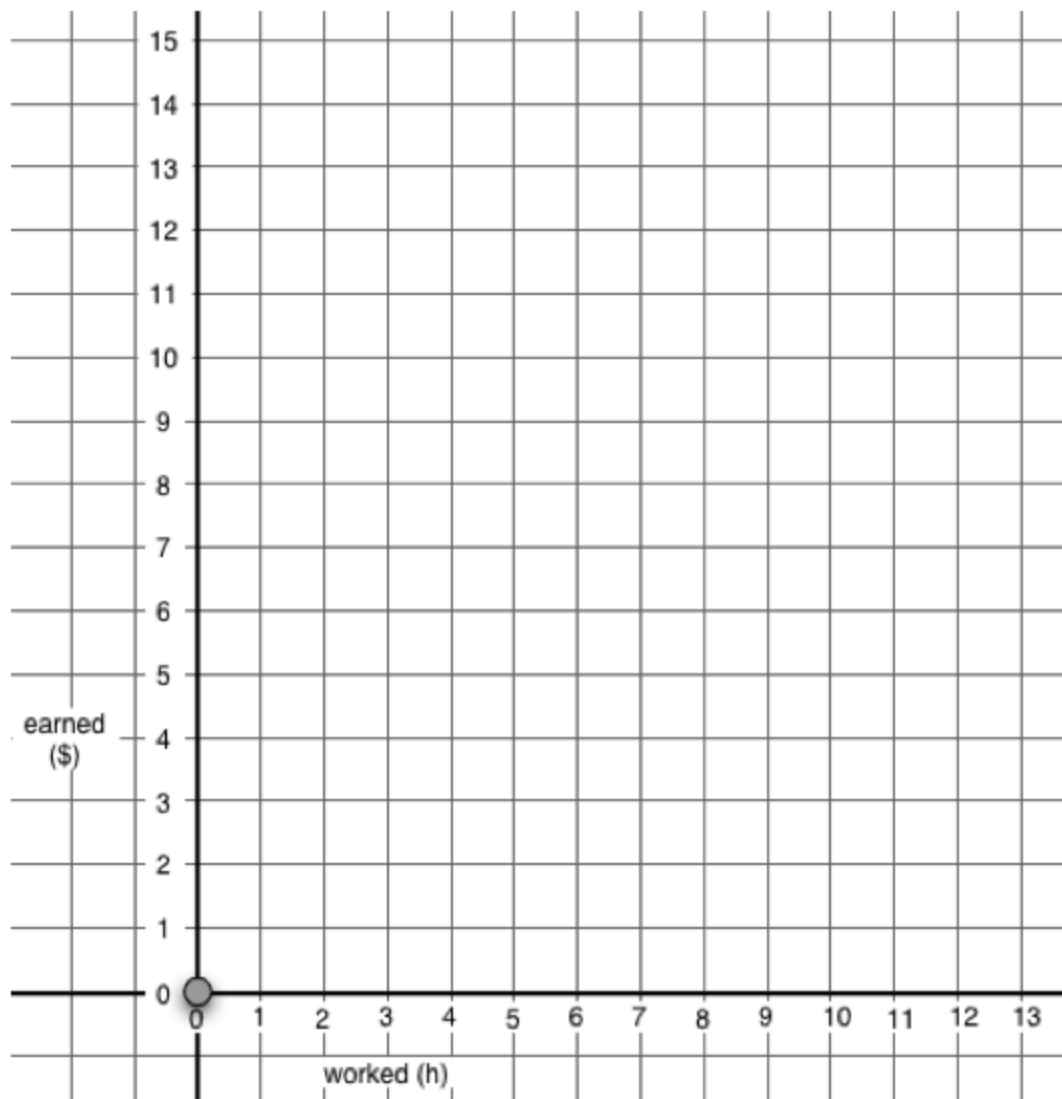


Overhead and Homework: Graphing

(Page 2)

Name: _____ Date: _____

Franklin earns \$2.00 per hour.
Sally earns \$5.00 every two hours.
Make graphs for both Franklin and Sally below.



What is the difference in what they earn after 6 hours of work?

Show this difference on the graph.