

Two Phone Plans II

Two Phone Plans II

Click [here](#) to download lesson.

Summary	Students will work on the comparison between two phone plans (also used in the lesson "Two Phone Plans I"), one of which has a lower rate, but a monthly basic charge, the other has a higher rate but no basic charge.
Goals	1. Use tables, graphs, and algebraic notation to solve a problem.
Materials	Overheads, Handouts
Keywords	Compare/Contrast Functions Contextualized Situations Full Class Discussion Inequality Functions Interpretation of Algebraic Expressions Interpretation of Equations Interpretation of Graphs Interpretation of Stories Intersections Linear Functions Production of Stories Small Group Work
Hints	Focus especially on the algebraic notation, $t \times 10$ and $60 + (t \times 5)$. Focus on the use of algebraic notation for each of the functions and for the point where the two lines cross.
Note	This same context is used in Lesson 4.33, "Two Phone Plans I". You do not have to use that lesson as well, but you may wish to so that students fully understand the situation.

Activity Plan:

1. Discussing the Problem [Whole Class; 20 minutes]

Show the first overhead (Page 1) and distribute the corresponding handout (also Page 1) with graph representing the problem:

Your mother is comparing two telephone offers:

Offer #1: You pay \$0.10 per minute for all the calls you make.

Offer #2: You pay \$0.60 per month, plus you pay \$0.05 per minute for all the calls you make.

(It doesn't matter what time of day or which day you make your calls.)

Discuss the advantages and disadvantages of each plan with the children.

Using the second handout and overhead (Page 2), ask them to:

- (a) Express the cost of each plan as a general rule, where t refers to the number of minutes they call during a month.
- (b) Discuss the notation for each of the two functions and ask the children to discuss the equation $t \times 10 = 60 + (t \times 5)$.
- (c) Compare the two phone plans on the different areas of the graph.

2. Representing the two options on graphs and algebraic notation [Group Work]

Have them analyze the graph and algebraic notation for different parts of the graph.

3. Discussion of Handout: Comparing the Two Functions [Whole Class]

Ask a few volunteers to present and discuss their answers.

4. Homework: A graph (Pages 3 & 4)

Children will write a story about a graph.

Overhead and Handout: The Problem and Graph (Page 1)

Name: _____ Date: _____

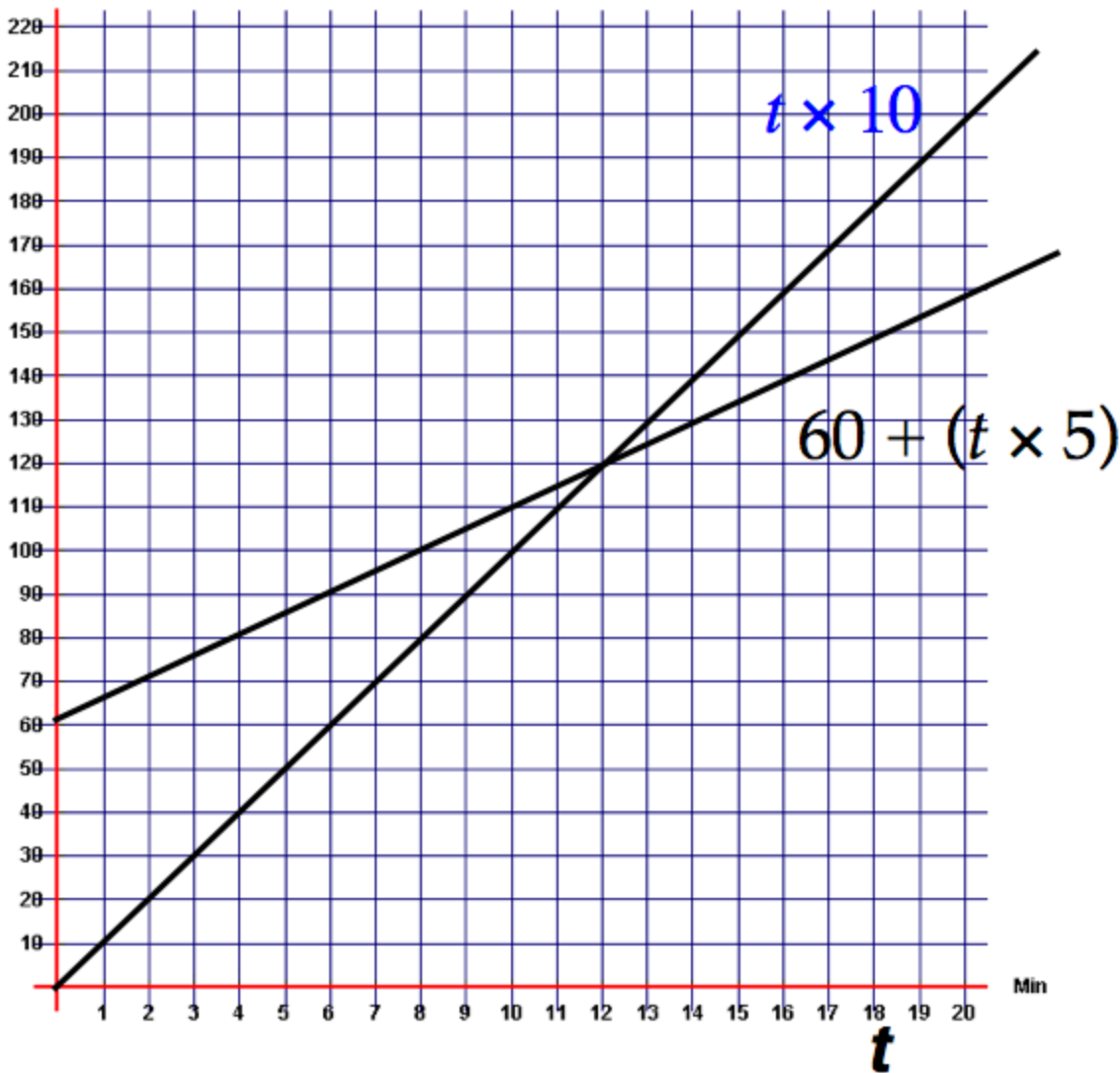
Your mother asked you to compare plans she received from two telephone companies:

Plan #1: You pay \$0.10 per minute for all the calls you make.

Plan #2: You pay \$0.60 per month, plus you pay \$0.05 per minute for all the calls you make.

(It doesn't matter what time of day or which day you make your calls.)

Cost [in cents]



Overhead and Handout: Which Plan Would You Choose? (Page 2)

Name: _____ Date: _____

Plan #1 is cheaper than plan #2 whenever you talk (more than, less than) _____ minutes.

Plan #2 is cheaper than plan #1 whenever you talk (more than, less than) _____ minutes.

Plan #1 costs the same as than plan #2 if you talk _____ minutes.

Person	Talks [minutes per month]	Which Plan is Better? Plan #1, #2, or 'it depends'?
Paulo	$5 \leq t \leq 10$	
Francisca	$25 \leq t \leq 30$	
Alice	$t > 35$	
Erica	$t < 20$	

$t \times 10 > 60 + (t \times 5)$ when $t > \underline{\hspace{2cm}}$ [minutes].

$60 + (t \times 5) > t \times 10$ when $\underline{\hspace{2cm}} < t < \underline{\hspace{2cm}}$ [minutes].

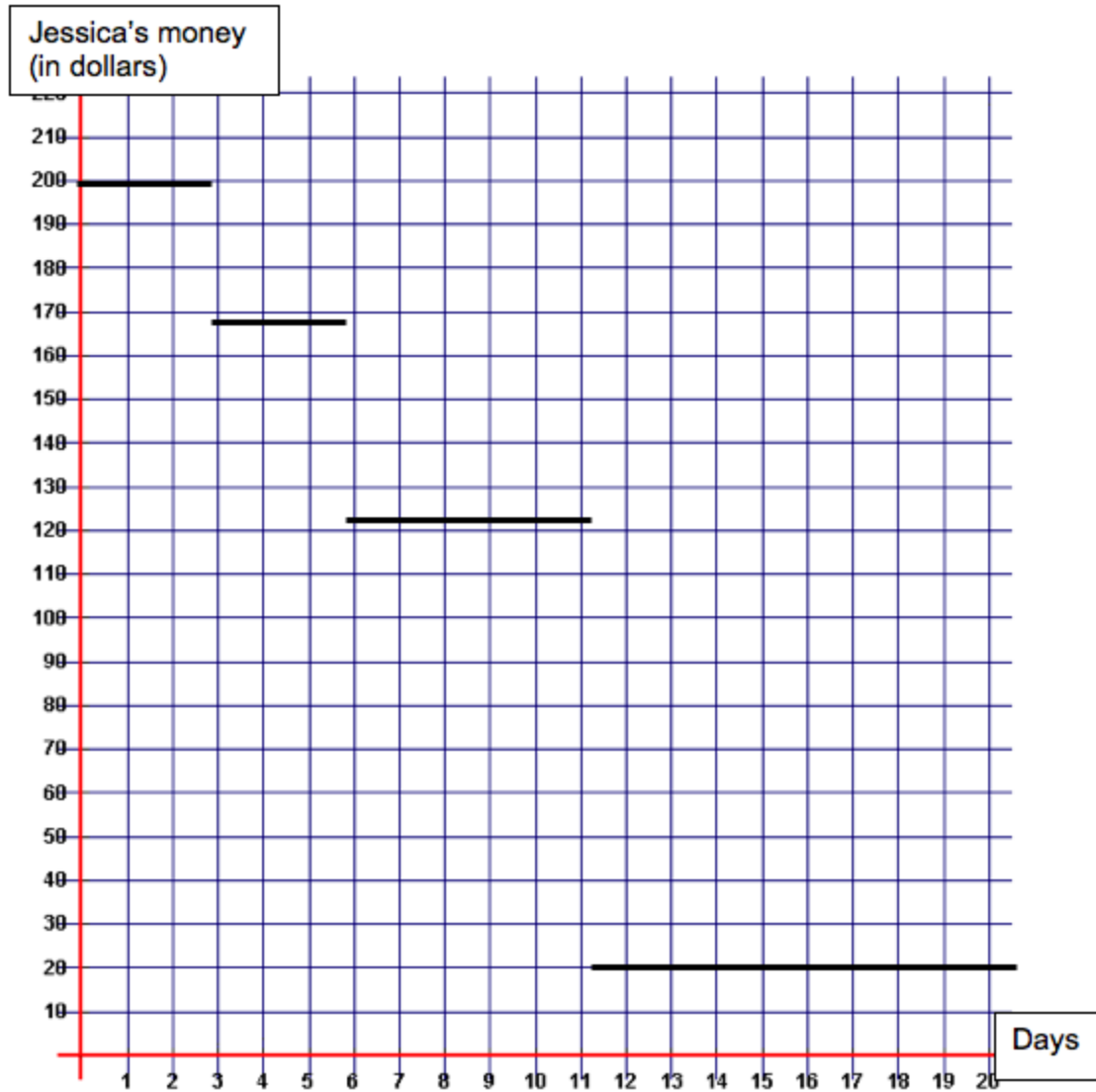
$60 + (t \times 5) = t \times 10$ when $t = \underline{\hspace{2cm}}$ [minutes].

Homework

(Page 3)

Name: _____ Date: _____

Jessica had \$200. Write a story about what happened to Jessica's money over 20 days.



Homework

Name: _____ Date: _____

Write here your story about what happened to Jessica’s money.