

Answer Key – Talk or Text?

Good news! Your parents just said that they would buy you your first cell phone and prepay \$25 each month for the plan of your choice. To make the best decision, you've found the two plans below. Compare the cell phone plans and choose the one that's right for you.

	TEXT MESSAGES	VOICE MINUTES
PLAN A	15¢/message	5¢/minute
PLAN B	5¢/message	10¢/minute



1. If you choose to only send text messages, which plan will allow you to send the most? How many will you be able to send?

Plan A: 166, Plan B: 500
Plan B allows you to send the most text messages.

Note: The exact value for A is $166\frac{2}{3}$, but you can't send a fraction of a message.

2. If you choose to only talk on the phone, which plan will allow you to talk the longest? How long will you be able to talk?

Plan A: 500, Plan B: 250
Plan A allows you to talk the longest.

3. If you talk for a total of two hours in a month, how many texts will you be able to send under Plan A? under Plan B?

Plan A: 126, Plan B: 260

Note: The exact value for A is $126\frac{2}{3}$, but you can't send a fraction of a message.

4. Create names for Plan A and Plan B that clearly communicate the benefits of each plan to potential customers.

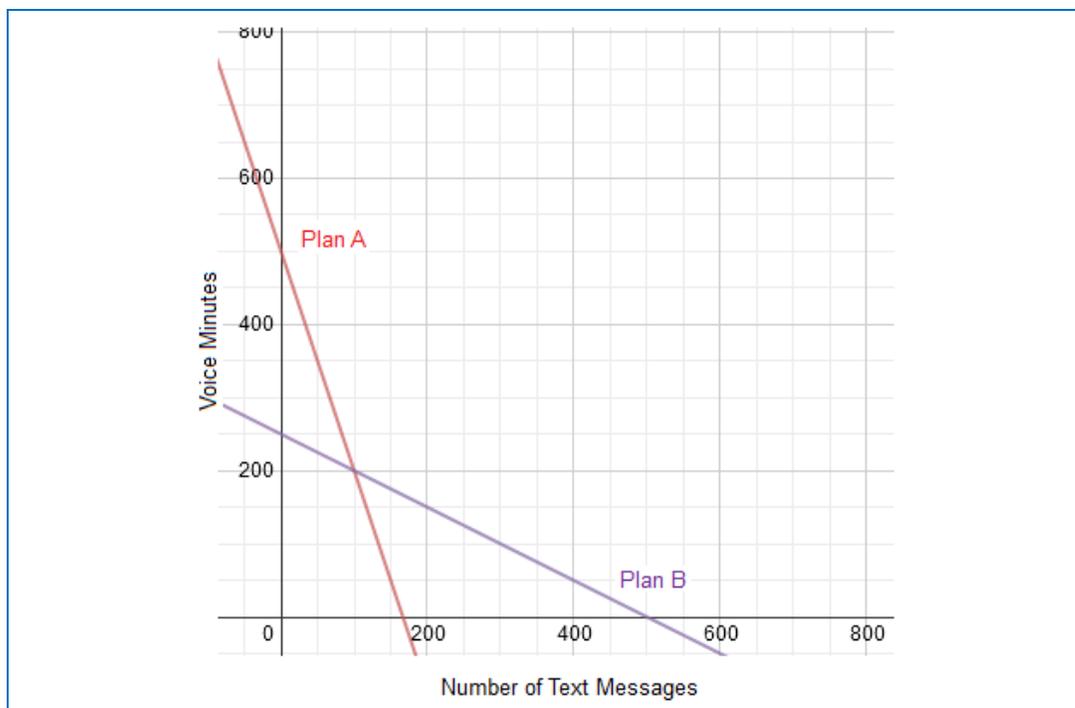
Answers will vary.

5. Write an equation for each plan to represent the number of text messages (x) and the number of voice minutes (y) you will be able to use with the \$25. You should have a separate equation for each plan.

$$\text{Plan A: } 25 = 0.15x + 0.05y$$

$$\text{Plan B: } 25 = 0.05x + 0.1y$$

6. Graph the two equations on the same coordinate grid.



7. Where do the graphs of the equations intersect? What does this point represent?

(100,200). This represents the number of text messages and the number of minutes used when both plans are the same.

8. Which plan would you choose? Why? Use mathematical reasoning in explaining your choice.

Answers will vary, but some answers may be:

- Plan A because I talk more on the phone.
- Plan B because I send more text messages.
- Plan B because the prices are 0.05¢/min and 0.10¢/min, rather than 0.05¢/min and 0.15¢/min.