

Mobilised

You need ✓ a classmate

✓ a computer



Activity

Koleti and her father are thinking of changing to Chatterphone cellphones. Koletti is investigating the different plans that Chatterphone offers. She doesn't make peak-time calls, but her father does.

Prepaid

- \$1.39 per minute for calls at peak times
- 49 cents per minute for calls at off-peak times
- 20 cents per text message

Earbasher

- \$10 per month plus:
- \$1.39 per minute for calls at peak times
 - 49 cents per minute for calls at off-peak times
 - 50 free text messages, then 20 cents per text

Long Talk

- \$30 per month plus:
- \$1.39 per minute for calls at peak times
 - 100 minutes free for calls at off-peak times, then 49 cents per minute
 - 60 free text messages, then 20 cents per text

1. Koletti looks first at a plan for herself. She draws up a table for Earbasher's off-peak call costs.



Time (in minutes)	Monthly cost (in dollars)
1	10.49
2	10.98
3	11.47
4	11.96

Koletti then writes a short cut for calculating Earbasher's off-peak calls.

$$\text{Monthly cost (\$)} = 10 + (\text{number of minutes} \times 0.49)$$

- Use the short cut to work out the cost for 20 minutes of off-peak calls.
- Including the \$10 per month, how much would Koletti actually pay per minute for:
 - 20 minutes of off-peak calls?
 - 40 minutes of off-peak calls?

2.



Each month, I use about 50 minutes of off-peak calls and send 20 texts.

Discuss with a classmate what the cheapest plan is for Koletí.



3.

Next, Koletí investigates the best plan for her father. She starts by looking at the peak-time call costs on the Long Talk plan.

- On this plan, what are the monthly costs for 10 minutes of calls at peak time?
-



I think Long Talk calls for 20 minutes a month at peak time will be twice what it costs for 10 minutes.

Is Koletí correct? How do you know?

- Write a short cut for calculating the monthly cost of calls at peak times, using the Long Talk plan.
- Koletí's father only uses his cellphone during business hours.

Discuss with your classmate which plan would be best for Koletí's father.

Each month, I usually make about 60 minutes of peak-time calls and send about 60 text messages.

4.

Koleti decides to look at plans for her cellphone based on text messaging.



What if I only send text messages?

Koleti makes a table to record her possible texting costs under each plan.

Number of texts	Prepaid (\$)	Earbasher (\$)	Long Talk (\$)
10	2	10	30
20			
30			
40			
50			
60			
70			
80			
90			
100			



- Create the table on a spreadsheet and fill in the missing values.
- Show the information from your spreadsheet as a scatterplot.
- Which is the cheapest plan for:
 - 30 texts per month?
 - 80 texts per month?
- Which is the best plan for Koleti, based on text messages?

5.

Koleti works out a short cut for finding the monthly texting costs for the Prepaid plan, given the number of text messages.



My short cut is:
cost = number of texts x 20 cents.

Rewrite Koleti's Prepaid short cut so that it uses a decimal or division.