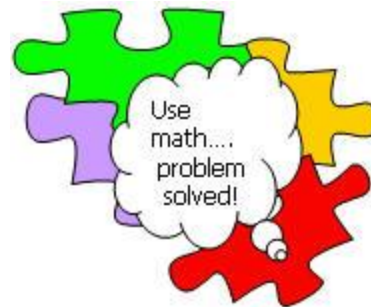


Mp3 Purchase Plans

Teacher Notes Page

Functions: SOL 8.14, 8.16, 8.17, 8.18



Objective:

The purpose of this activity is to allow students to use tables, graphs, rules and linear functions in a real world application and determine which mp3 plan is most beneficial to them as individuals.

Background Knowledge:

In order to complete this activity, students will need background knowledge of how to write linear equations, complete a function table, graph on the coordinate plane, and analyze data.

Essential Vocabulary:

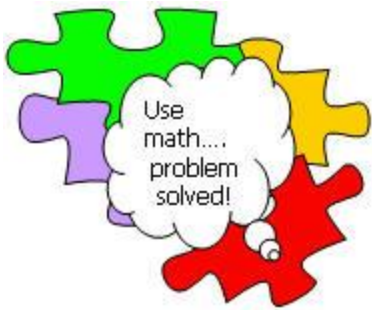
Coordinate plane, Ordered Pair, X-Axis, Y-Axis, Quadrant, Graph, Coordinates, Origin, Relation, Function, Linear Equation, Domain, Range, Independent Variable, Dependent Variable, Slope, Y-Intercept.

Materials:

Copies of the Student Packet
Rulers
Color Pencils (optional)
Calculators

Helpful Suggestions:

- **Hints:**
 - A.) If students are having trouble writing the equations for question 2, you may want to have them start by completing the table in question 3.
- **Classroom Use:**
 - A.) This problem could be assigned as a project and could be collected at the end of the unit.
 - B.) This problem could be also be broken down into smaller sections and worked on daily.



Name: _____
Date: _____ Period: ____

Problem Solving Graphic Organizer

Understand the Problem: (Identify question and all important information needed to solve problem)
Plan: (List strategy/strategies to use to solve problem)
Solve: (Implement plan, show all work, don't erase "wrong" answers)
Check: (Is answer correct, does it answer question asked in problem?)
Final Answer: (Give your final answer in a complete sentence).

Name: _____

Date: _____ Period: ____

Problem Solving Reflection Organizer

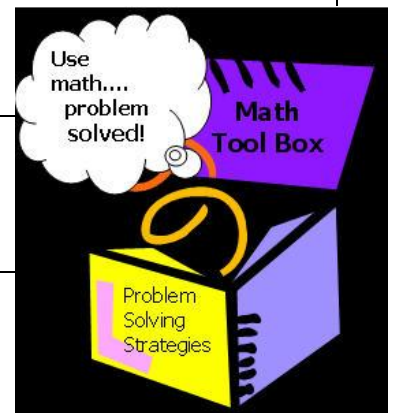
What strategies did you use?

Which strategies were successful?

How could you apply these strategies in the future?

What did you learn from solving this problem?

What did you add to your problem solving toolbox?



Name: _____
Date: _____ Period: _____



MP3 Plan Memberships

You have decided to buy a plan for your mp3 purchases and have three choices of plans. The three plans are outlined below.

i-Sound

\$1 for each download

Rhaps

\$13 a month unlimited
downloads

e-musical

\$4 monthly membership fee
and \$0.40 per download

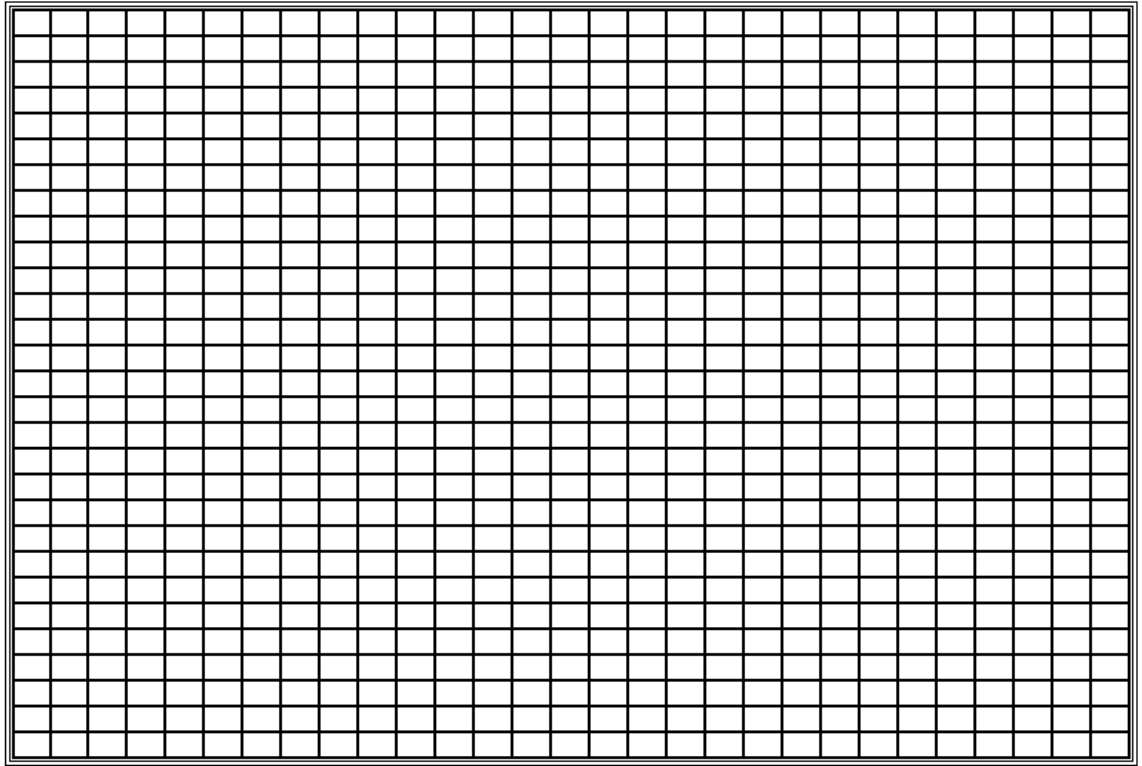
1. Which plan would you buy? Why?
2. Write an equation to represent the cost, c , for each plan based on the number of downloads, d , you purchase.
 - a. i – Sound: _____
 - b. Rhaps: _____
 - c. e – musical: _____

3. Complete the table below to determine how much it would cost for each download with each plan.

Number of Downloads	i-sound	Rhaps	e-musical
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

4. Using the table you constructed, graph the cost of the three plans below.

**Cost
of
Plan**



Number of Downloads



5. Identify the independent and dependent variables in this problem.

a. Independent Variable: _____

b. Dependent Variable: _____

6. What is the domain and why is this the case?

7. What is the range and why is this the case?

8. If you buy less than 5 mp3s a month on average, which plan would you choose? Explain your answer.

9. If you buy between 10 and 20 mp3s per month on average, which plan would you choose? Explain your answer.

10. If you buy more than 20 mp3s per month which plan would you choose? Explain your answer.

11. Which company has the best plan for you? Explain your reasoning.

12. Which representation — the advertisements, the table, or the graph — helped you most in deciding which plan is best? Explain your reasoning.

13. What other real life purchase plans could be analyzed this way?

Mp3 Purchase Plans

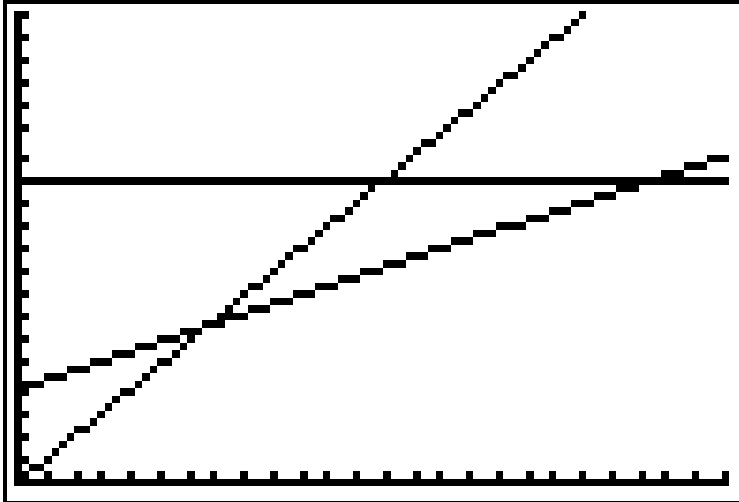
Solutions Page

Functions: **SOL 8.14, 8.16, 8.17, 8.18**



1. Answers may vary.
2. a. $c = d$
b. $c = 13$
c. $c = .4d + 4$
- 3.

Number of Downloads	i-sound	Rhaps	e-musical
0	0	13	4
1	1	13	4.40
2	2	13	4.80
3	3	13	5.20
4	4	13	5.60
5	5	13	6
6	6	13	6.40
7	7	13	6.80
8	8	13	7.20
9	9	13	7.60
10	10	13	8
11	11	13	8.40
12	12	13	8.80
13	13	13	9.20
14	14	13	9.60
15	15	13	10
16	16	13	10.40
17	17	13	10.80
18	18	13	11.20
19	19	13	11.60
20	20	13	12
21	21	13	12.40
22	22	13	12.80
23	23	13	13.20
24	24	13	13.60
25	25	13	14



5. a. Independent Variable → Number of Downloads
b. Dependent Variable → Cost of Plan
6. The domain is all numbers greater than 0, because you cannot buy a negative number of downloads.
7. The range is all numbers greater than 0, because you cannot be charged a negative amount of money.
8. i - sounds would be the better buy if you purchased less than 5 mp3s per month because it costs the least.
9. e – musical would be the better buy if you purchased between 10 and 20 mp3s per month because it costs the least.
10. If buying more than 23 mp3s per month I would use Rhaps, but if I was buying between 20 and 23 mp3s per month I would use e – musical because that is when they cost the least.
11. Answers may vary.
12. Answers may vary.
13. Answers may include: health club memberships, cell phone plans.