

Standards:

7.RP.2 with connections to 6.RP.3

Solutions to Cheese Goldfish Problem

Commentary: This task gives the costs of various cheese goldfish products at one store and asks students to compare the three products price per ounce or ounce per price in order to see which one is the best deal. This task connects back to standard 6.RP.3 having student intuitively working through a ratio table to find various price and ounce relationships for each product. Students are asked to find a unit rate of either ounces based off one dollar or dollars based off ounces. This could lead to rich conversation as students define and graphically represent unit rate in two different ways. The task ends with an open question that asks students to come up with a possible product that offers a better value than any of these products.

Solutions with Comments:

1. These are possible examples of ratio tables. Students basically double or halve or multiply or divide by a constant product to get other equivalent ratios. There is no necessary order in the table. What ever you multiply the cost by you should multiple the ounces by the same multiple (a constant product).

Bag:

Cost \$	2	4	8	10	70	60	1	.33
ounces	6	12	24	30	210	180	3	1

Box:

Cost \$	5	10	1	70	100	.56	25	150
ounces	9	18	1.8	131	180	1	45	270

Big Box:

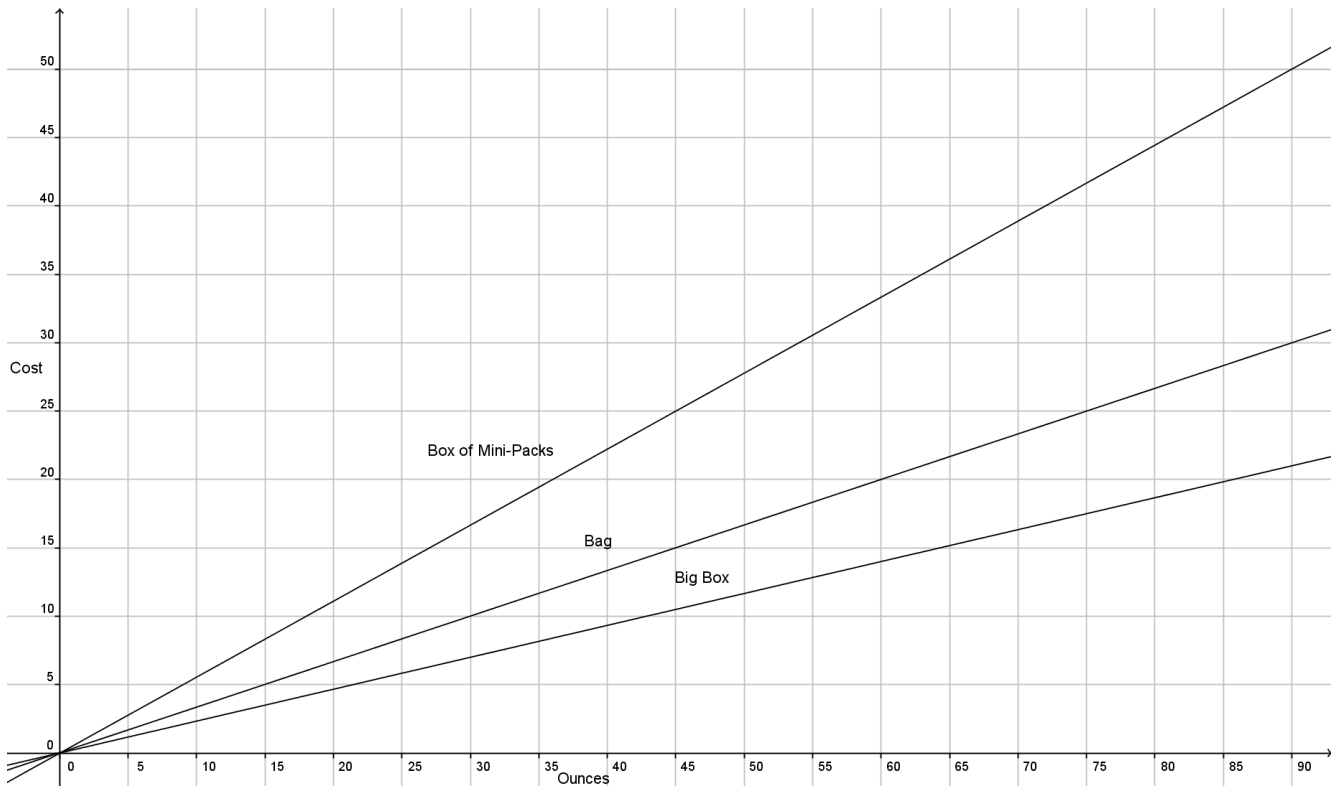
Cost \$	7	14	21	42	70	10	1	.23
ounces	30	60	90	180	300	42.86	4.29	1

2.

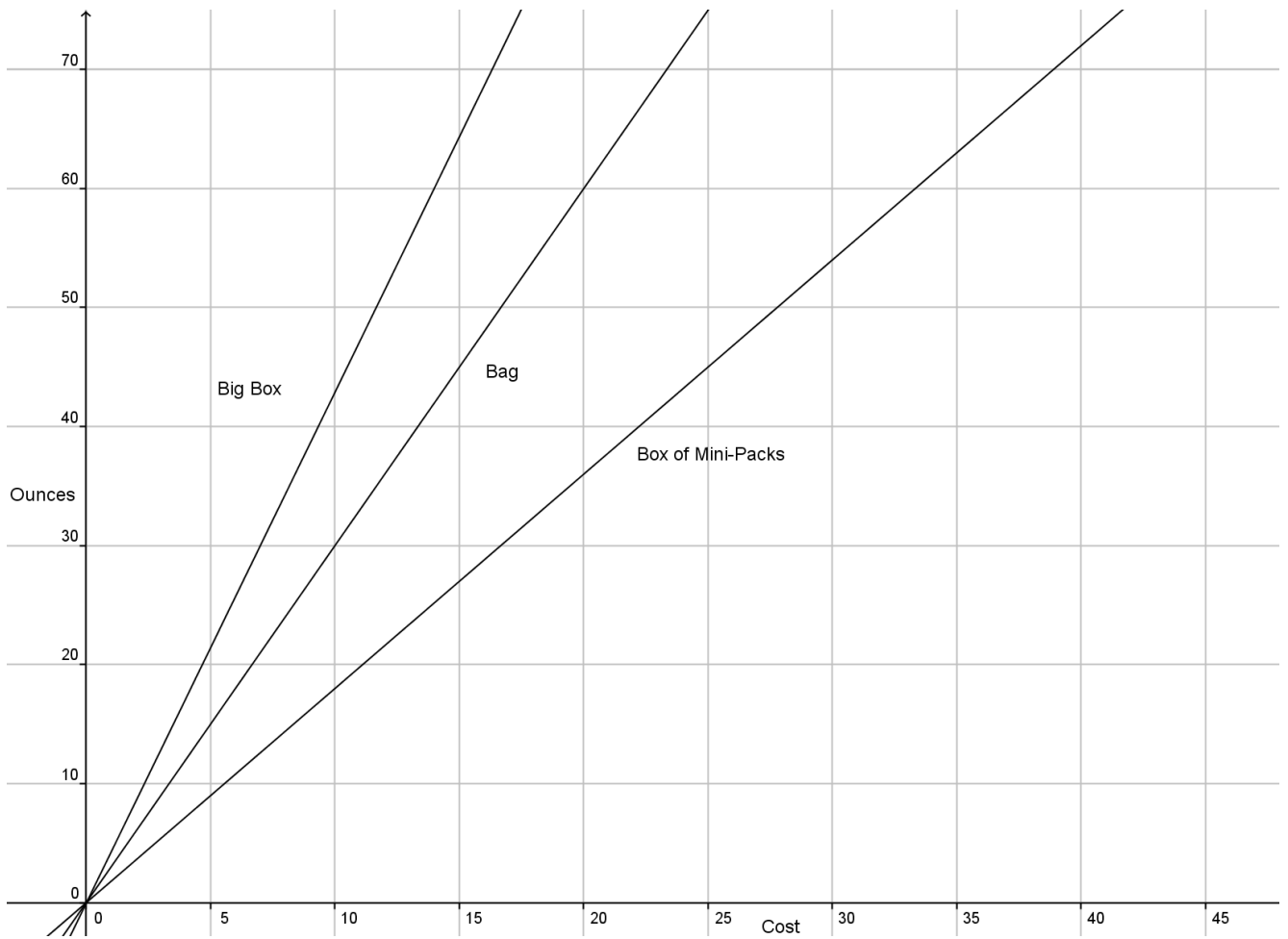
Product	Cost Per Ounce in Dollars	Ounces Per Dollar
Bag	0.33	3
Box	0.56	1.8
Big Box	0.29	4.29

3. The big box gives the best deal. You can tell from cost per 1 oz, or any multiple of 90 oz. You can also tell from comparing ounces for the same price. All three deals can easily be compared at \$70 or \$1.

4. A possible graph comparing ounces of goldfish to cost:



A possible graph comparing cost of goldfish with ounces:



5. For example, on the graph comparing ounces to cost I can see that the point (90, 50) is a point on the line of the box of mini-packs of goldfish product. This means that 90 ounces cost \$50 which is the same rate as nine ounces for five dollars or about 56 cents per ounce.
6. All three products and their graphs represent a proportional relationship. All three graphs demonstrate a constant rate of change and pass through the origin.
7. This is an open question. There are many possible examples. Students need to come up with a cost per ounce that is less than the big box. Anything will work that is less than 23 cents per ounce and the box should also be hold more than 30 oz of Goldfish. A possible answer might be 50 oz for \$10 would make sense. This would be 20 cents per ounce or five ounces per dollar.

Activity and solutions written by **Yummymath.com**