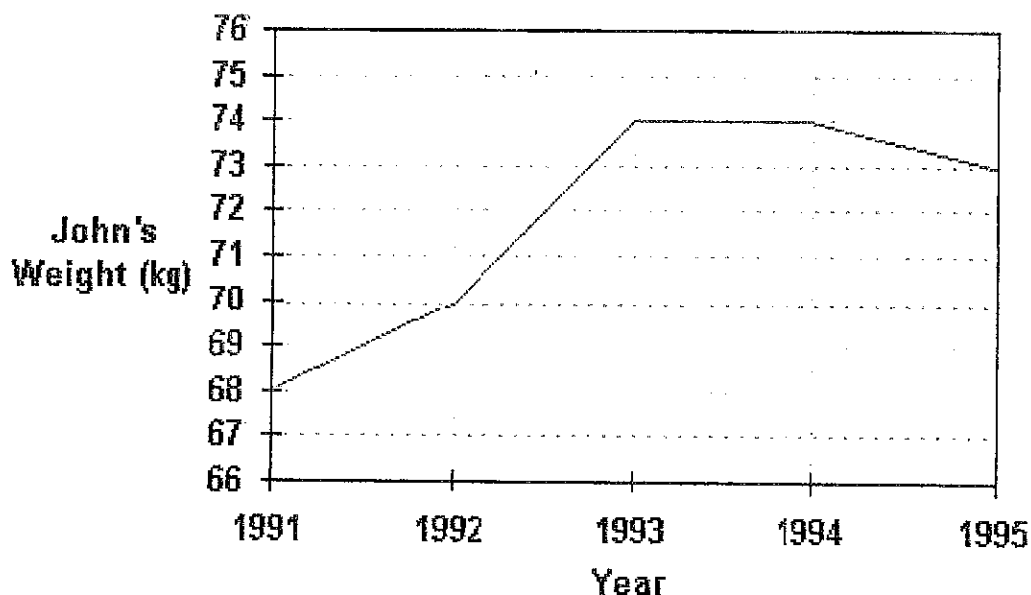


Interpreting Line Graphs

A line graph is a way to summarize how two pieces of information are related and how they vary depending on one another. The numbers along a side of the line graph are called the scale.

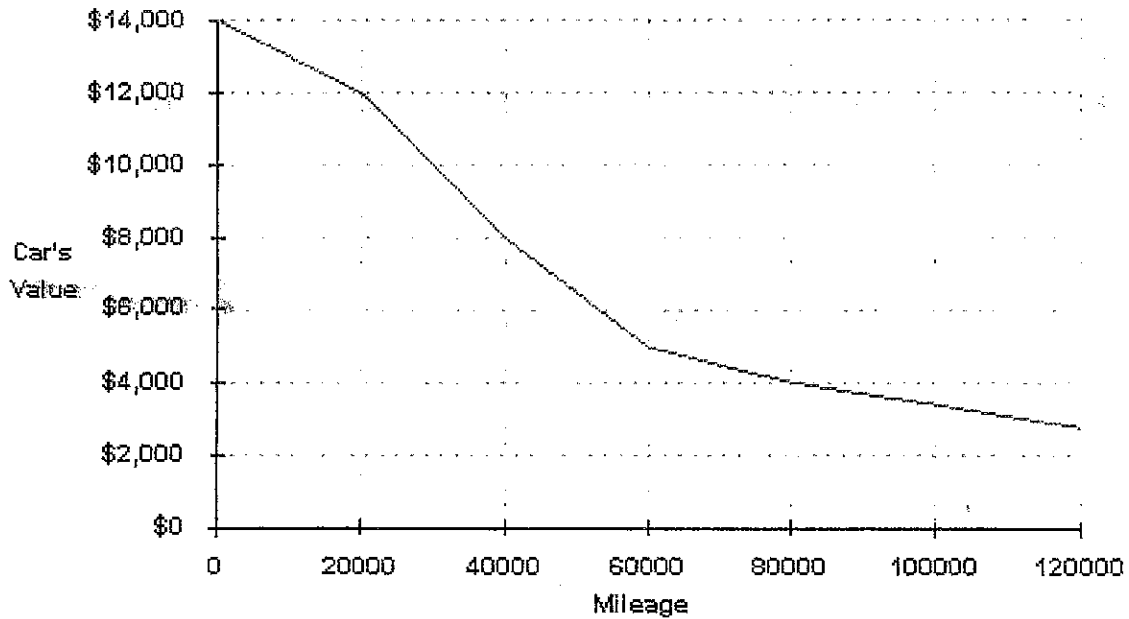
Example 1:



The graph above shows how John's weight varied from the beginning of 1991 to the beginning of 1995. The weight scale runs vertically ("Y" axis—dependent variable), while the time scale is on the horizontal axis ("X" axis—dependent variable).

1. In what year was John's weight 70 kg? _____
2. Between which two years did John's weight remain stable? _____
3. What was John's stable weight? _____
4. How much weight did John gain from 1991 to 1995 (be careful)? _____

Example 2:



This line graph shows the average value of a pickup truck versus the mileage on the truck.

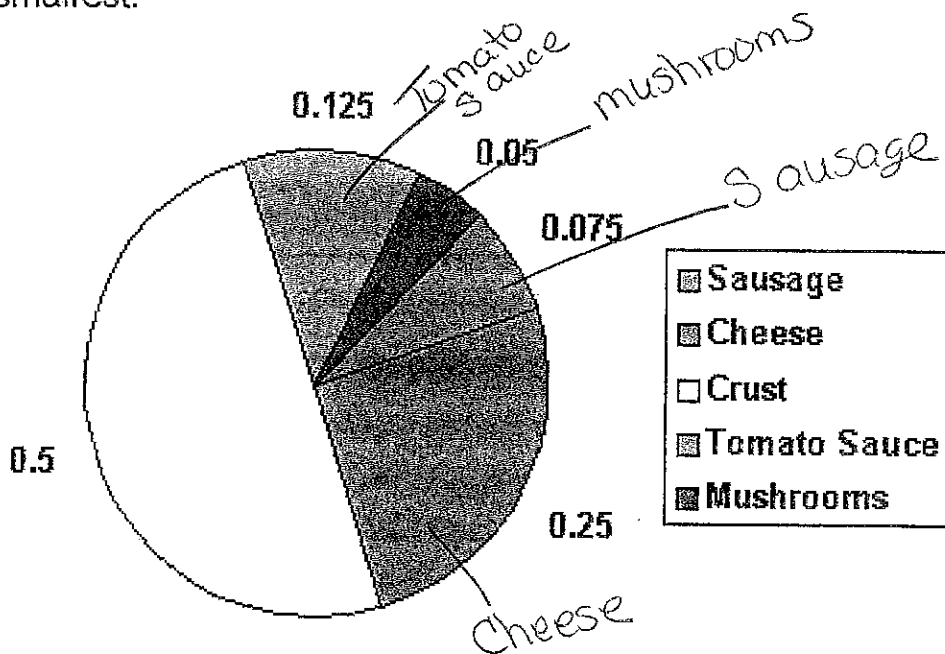
1. What is the value of the truck when it is new (0 miles)? _____
2. What is the value of the truck after 40,000 miles? _____
3. What is the value of the truck after 30,000 miles?
4. How much does the value of the truck decrease after it is driven 120,000 miles?

Interpreting Pie Graphs/Charts

A pie chart is a circle graph divided into pieces, each displaying the size of some related piece of information. Pie charts are used to display the sizes of parts that make up some whole.

Example 1:

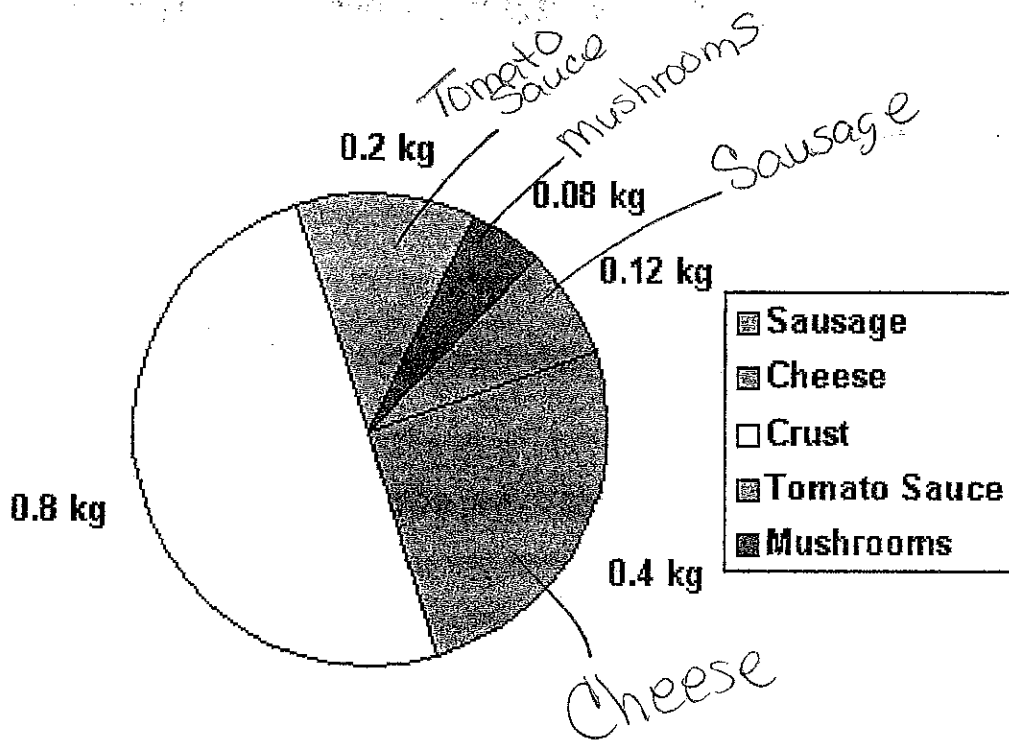
The pie chart below shows the ingredients used to make a sausage and mushroom pizza. The fraction of each ingredient by weight is shown in the pie chart below. We see that half of the pizza's weight comes from the crust. The mushrooms make up the smallest amount of the pizza by weight, since the slice corresponding to the mushrooms is smallest.



1. What percentage of the pizza is made of crust? _____
2. What percentage of the pizza is made of tomato sauce? _____
3. What percentage of the pizza is made of toppings? _____
4. These three totals equal what percentage of the pizza? _____

Example 2:

The pie chart below shows the ingredients used to make a sausage and mushroom pizza weighing 1.6 kg. This is the same chart as above, except that the labels no longer tell the fraction of the pizza made up by that ingredient, but the actual weight in kg of the ingredient used. The sum of the numbers shown now equals 1.6 kg, the weight of the pizza. The size of each slice is still the same, and shows us the fraction of the pizza made up from that ingredient. To get the fraction of the pizza made up by any ingredient, divide the weight of the ingredient by the weight of the pizza. What fraction of the pizza does the sausage make up? We divide 0.12 kg by 1.6 kg to get 0.075 then multiply by 100—this tells us that 7.5% of the pizza is made of sausage.

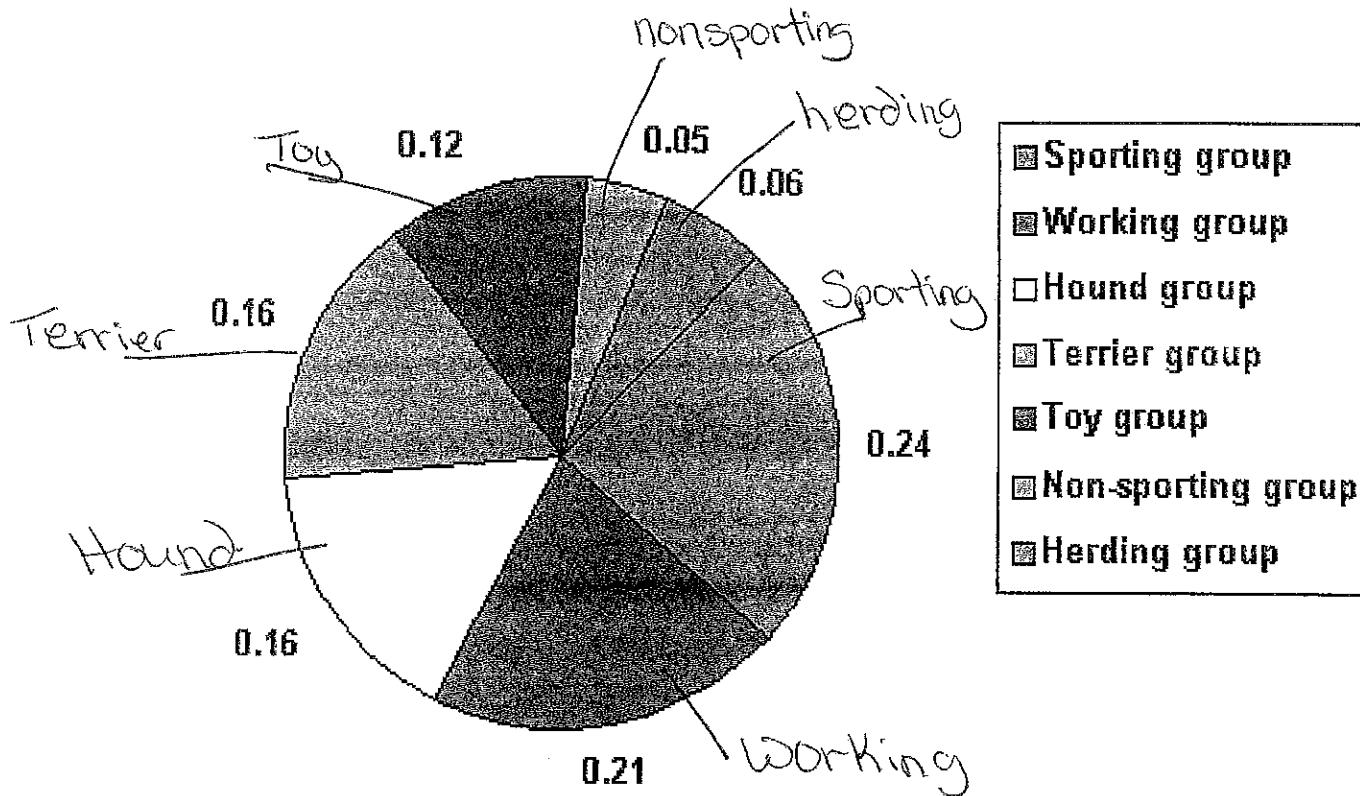


1. What percentage of the pizza is made of cheese? _____
2. What percentage of the pizza is made of crust? _____
3. What percentage of the pizza is made of tomato sauce? _____
4. What percentage of the pizza is made of mushrooms? _____
5. Now compare these percentages to the previous example—what do you notice?

6.

Example 3:

The pie chart below shows the fractions of dogs in a dog competition in seven different groups of dog breeds. We can see from the chart that 4 times as many dogs competed in the sporting group as in the herding group. We can also see that the two most popular groups of dogs accounted for almost half of the dogs in the competition. Suppose 1000 dogs entered the competition in all. We could figure the number of dogs in any group by multiplying the fraction of dogs in any group by 1000. In the toy group, for example, there were $0.12 \times 1000 = 120$ dogs in the competition.



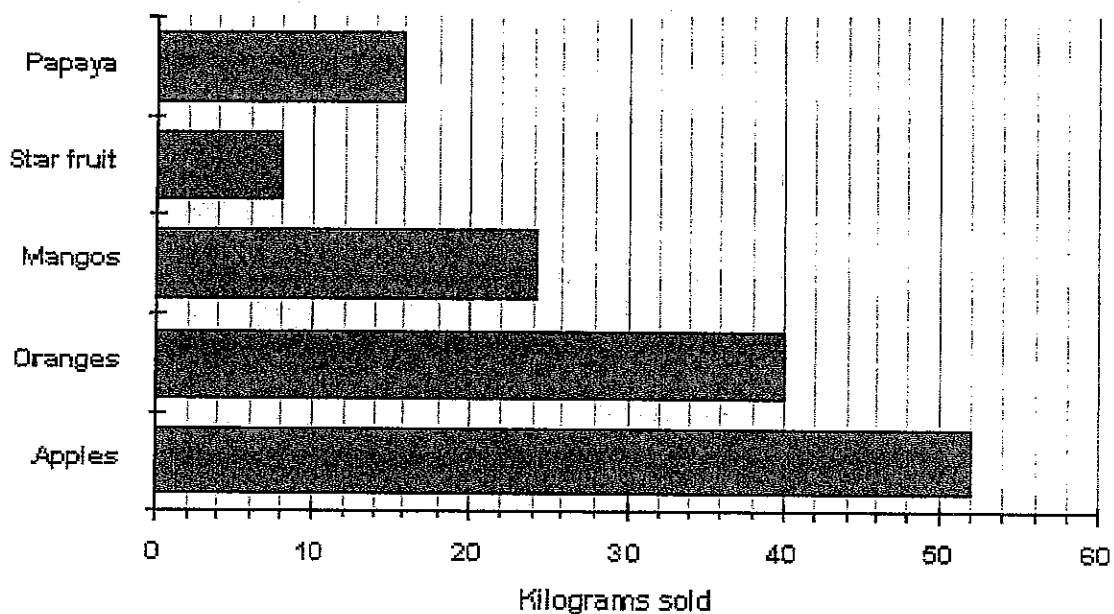
1. How many dogs competed in the working group? _____
2. How many dogs competed in the non-sporting & herding groups? _____
3. Which group had the most number of dogs competing? _____
4. Which group had the least number of dogs competing? _____

Interpreting Bar Graphs

Bar graphs consist of an axis and a series of labeled horizontal or vertical bars that show different values for each bar. The numbers along a side of the bar graph are called the scale.

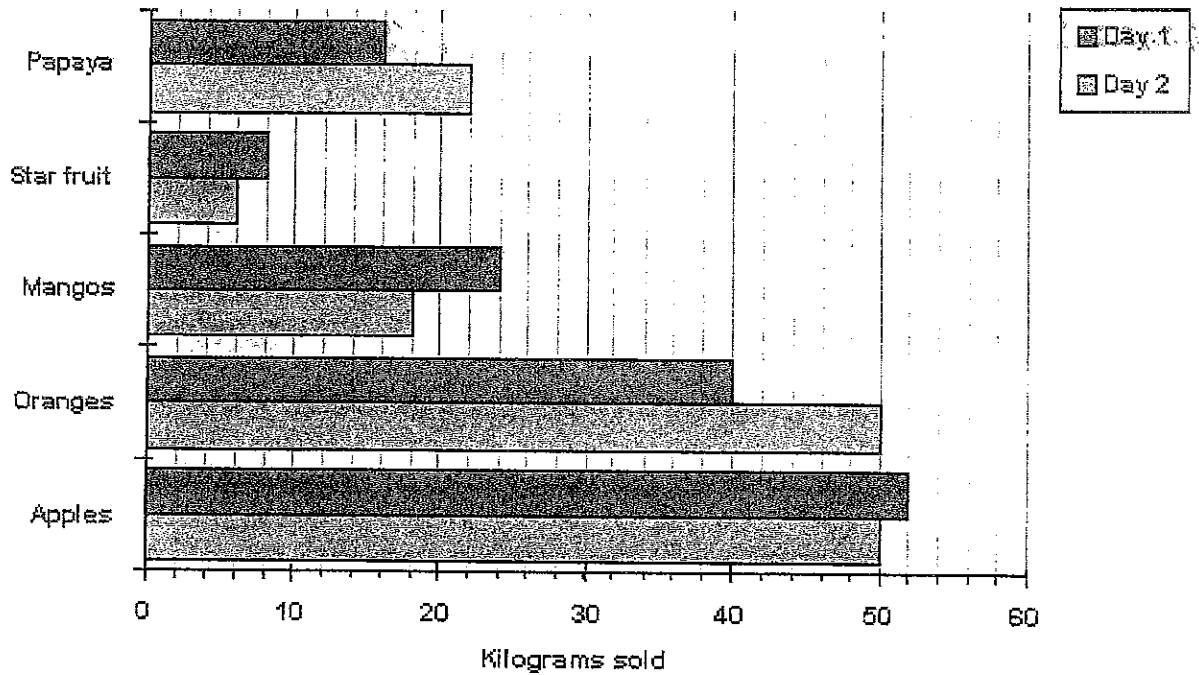
Example 1:

The bar chart below shows the weight in kilograms of some fruit sold one day by a local market. We can see that 52 kg of apples were sold, 40 kg of oranges were sold, and 8 kg of star fruit were sold in one day.



1. How many kg of Papaya fruit were sold? _____
2. Which fruit sold the most in kg? _____
3. Does this necessarily mean that the store sold more apples than any other fruit?
4. Why? _____

Example 2: A double bar graph is similar to a regular bar graph, but gives 2 pieces of information for each item on the vertical axis, rather than just 1. The bar chart below shows the weight in kilograms of some fruit sold on two different days by a local market. This lets us compare the sales of each fruit over a 2 day period, not just the sales of one fruit compared to another.



1. Which fruits sold more on day 1 than day 2? _____
2. In kg, how much more oranges were sold on day 2 than day 1? _____
3. Over the two day period which fruit sold the most? _____
4. Over the two day period which fruit sold the least? _____
5. What was the total weight of star fruit sold over the two day period? _____

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