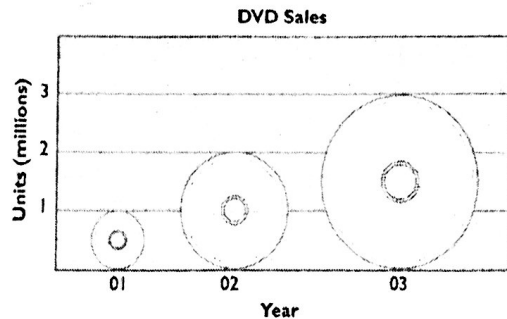
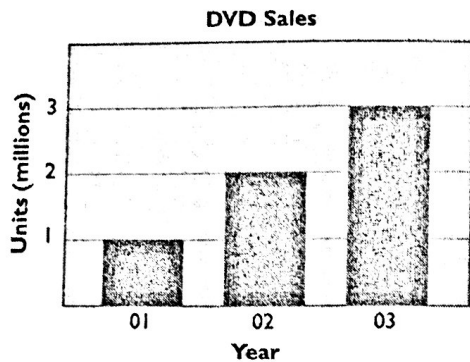


Example 1) Consider the following two graphs:



a) Which of the two graphs is misleading?

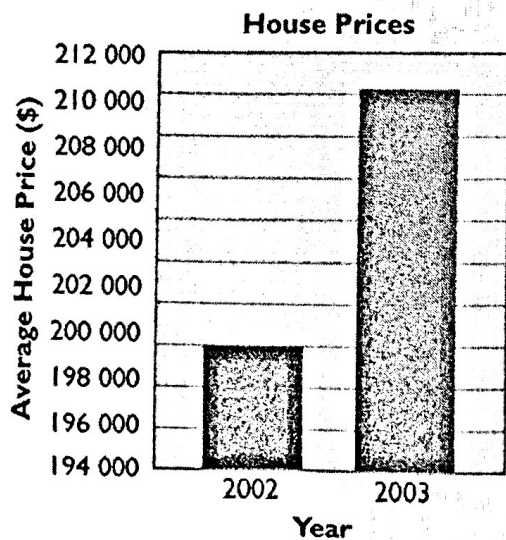
Why? The second graph.
There are 3 times the sales, but the DVD is more than 3 times the size of the small one.

b) Why might someone want to use the misleading graph?

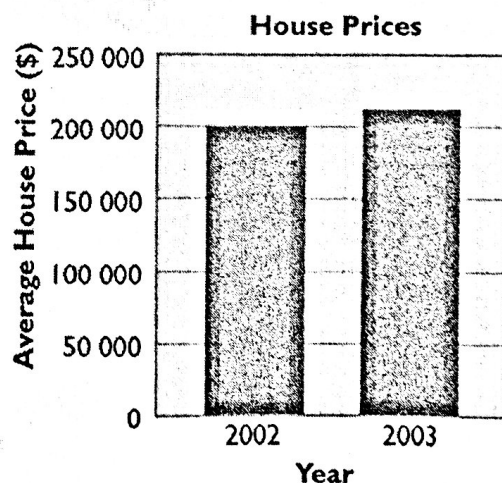
If your job depended on how well DVDs are selling.

Example 2) Average houses prices went up \$10,250 in one year. This is graphed below.

i)



ii)



a) Which of the following graphs displays the data without misleading?

The second graph.

b) What is it about the construction of the graph that makes it misleading?

The vertical scale

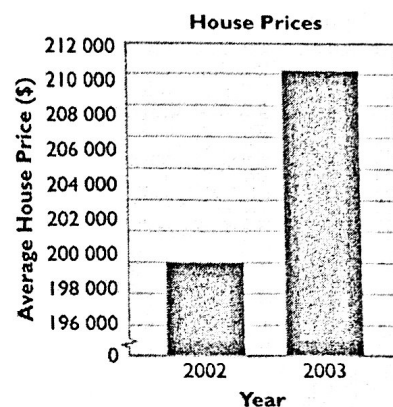
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c) What is the percent increase from 2002 to 2003? In other words, what percent of the 2000 price (200,000\$) is the increase (10,250\$)?

$$\frac{10,250}{200,000} \times 100\% = 5.125\% \text{ in one year.}$$

d) The percent increase in part c) is significant, even more so if earnings and other prices have not increased as much. Why is the following graph a less misleading way to display data where values are large numbers and starting a scale at 0 shows little change?

The scale starts at 0,
but the broken line
represents 0 - 196,000.



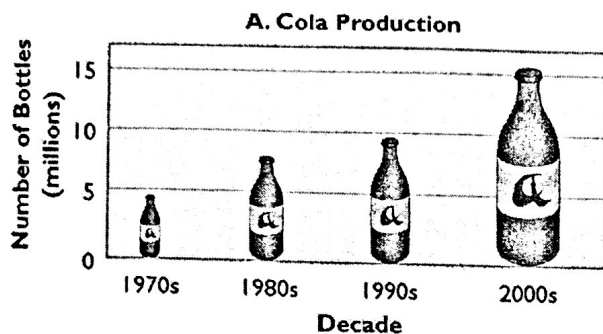
Summary: There are two major ways that graphs can be made misleading...

- 1) By changing the size, colour, text, etc. of the graph
- 2) By the changing the scale of the graph.

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In the following practice, keep in mind the two ways that graphs can be made misleading: By changing the scale of the graph, or by changing the colour, size, or style of the graph. We will discuss these solutions before you go today.

- 1) a) How is the graph misleading?

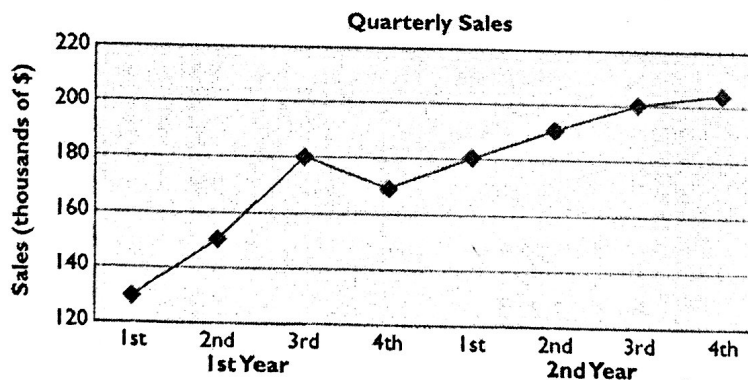


- b) Who might use the graph and why?
c) What changes would make the graph more accurate and less misleading?

- a) The size (width) of the bars change. It shows more than 3x the bottles.
b) If you wanted to dramatically show that bottle production is increasing.



- 2) A company shows the graph below to its shareholders and customers.



- a) Which quarter had the greatest increase in sales over the previous quarter?
b) Describe the sales during the second year compared to those in the first year.
c) What makes this graph misleading?
d) How could the graph be changed to present the data more accurately?

- a) 2nd - 3rd in year 1
b) generally higher, increasing each quarter.

- d) Start the scale at 0, or use the broken line.

- c) The scale!

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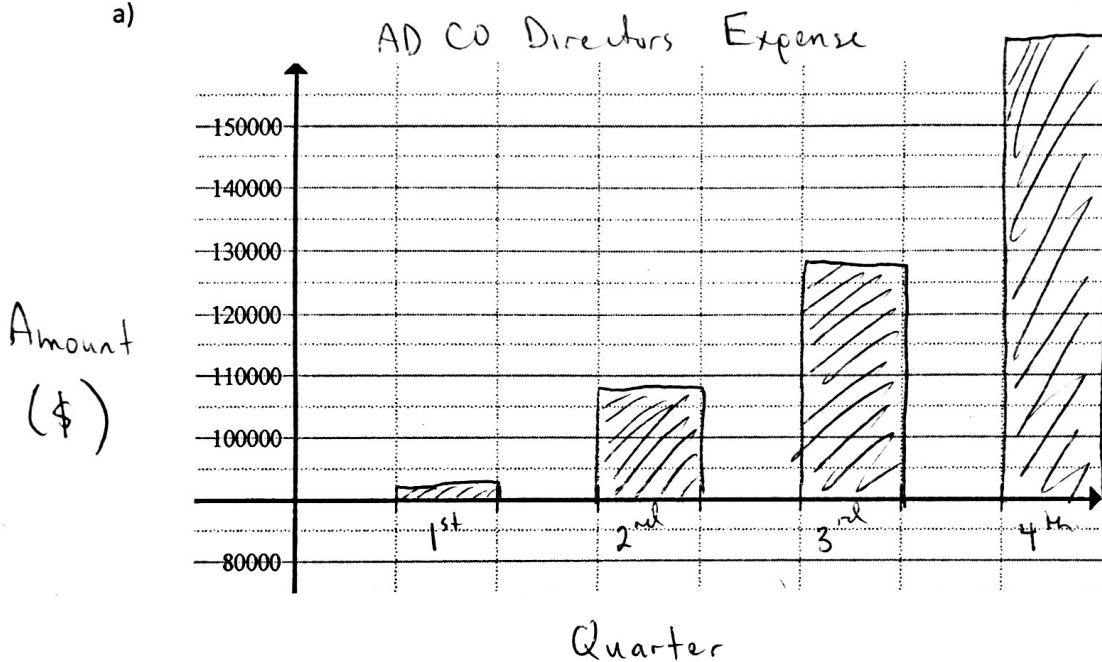
3) Display the data in the spreadsheet on the next page in a graph each of the following ways. Explain each graph.

- the way the directors might if they wanted to minimize their expenses
- the way the news media might if they wanted to create an impression of overspending on the part of the directors

Mr. Smith has given you a scale to help you get started.

	A	B
1	AD CO Directors Expense	
2	Quarter	Amount (\$)
3	1st	92000
4	2nd	109000
5	3rd	128000
6	4th	164000

a)



b)

