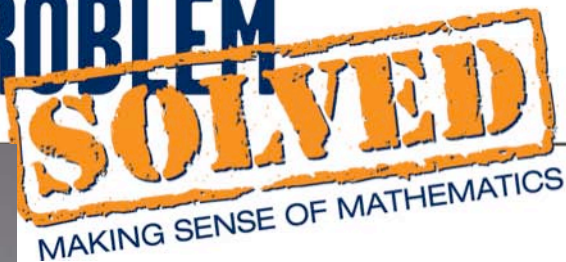


After watching the video, *Representing Data Carefully*, complete the following problems.

1. Over a 12-month period, the assets of a business are approximated by  $y = \frac{x^3}{125} - \frac{x}{2} + 10$ , where  $x$  is the number of months since the start of last year, and  $y$  is measured in tens of thousands of dollars.

Using your graphing technology, graph the business assets over the interval  $0 \leq x \leq 12$ . Experiment with different  $y$ -ranges. Try  $0 \leq y \leq 100$ . Try  $5 \leq y \leq 20$ . Try others!

- What would be a good  $y$ -range to use to emphasize that the business triumphed over adversity?
- What would be a good  $y$ -range to use to give the impression of slow, relatively steady growth?
- What would be a good  $y$ -range to use to give the impression of a company with barely any growth at all?
- What would be good  $x$ -range and  $y$ -range to give the impression of quick, steady growth?



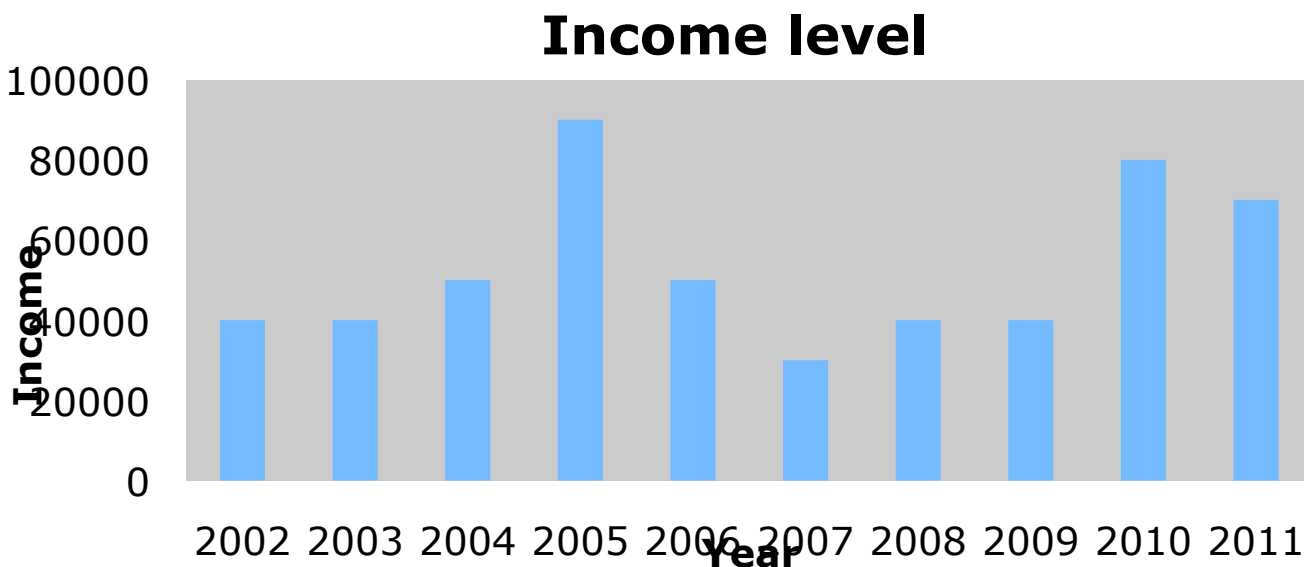
2. Fill in the following table of values for various businesses. Recall that the percent change in value is given by  $\frac{\text{new value} - \text{old value}}{\text{old value}} \times 100$ .

Company name	Value in 2010	Value in 2011	Change in value	Percent change in value
Montgolfier Brothers	\$150,000	\$200,000		
Blanchard & Jeffries	\$10,000	\$60,000		
Piccard Explorers	\$1,000,000	\$1,050,000		
Kittenger Parachutes	\$50,000	\$100,000		

Which company is the most successful, or are they all equally successful? Justify your answer.

3. You are deciding between two automobiles. One of them costs \$22,195. Another, slightly nicer, model costs \$23,195.
- Make an argument that the nicer model is significantly more expensive.
  - Make an argument that the nicer model is not significantly more expensive.

4. Shown below is a bar graph of a salesperson's income over ten years:



- Compute the mean, median, and mode.
- Which number will the salesperson mention in conversation with her supervisor?
- Which number will the salesperson mention in conversations with an IRS auditor?
- In your opinion, which number is the most accurate representation of how the salesperson did over the last ten years?