Lecture #2  ES 70 Energy Economics  Assignment

**Question 1.** Briefly describe the purpose of economic analysis when applied to energy projects.

**Question 2.** What are some of the limitations described in the lecture that you must be aware of before performing an economic analysis?

**Question 3.** As we discussed in the lecture, much information must be gathered before an economic analysis can begin. As an example, if you were going to buy an air-conditioning unit for your home, how would you go about obtaining information to start your own analysis?

**Question 4.** In the refrigerator example described in the lecture, the first cost of the more energy efficient “energy star” refrigerator is $890. Imagine that you want to add features that increase the price to $1,200. How does this price increase change the simple payback calculation? (Assume that the annual energy savings remains the same – $16 per year.)

Remember the formula for simple payback is:

\[
\text{Simple payback (in years)} = \frac{\text{cost}}{\text{savings}}
\]

Where \text{cost} equals the difference in first cost between the two alternatives (in dollars). Where \text{savings} equals the difference in energy consumption between the two alternatives (in dollars).

**Question 5.** Using the same example as above, what happens to the simple payback if energy costs increase and the annual energy savings is now $30 per year instead of $24 per year? Does the increasing energy prices make this a better or worse “investment”?