ISE 311 Engineering Economic Analysis HW-1

1. Some of the following problems would be suitable for solution by engineering economic analysis. Which ones are they?

a) Would it be better to buy a car with a diesel or gasoline engine?

b) Should an automatic machine be purchased to replace three workers now doing a task by hand?

c) Would it be wise to enroll for an early morning class to avoid traveling during the morning traffic rush hours?

d) Would you be better off if you changed your major?

e) One of the people you might marry has a job that pays very little money, while another has a professional job with an excellent salary. Which one should you marry?

I think answer a would be suitable for solution by engineering economic analysis.

2. Many people write books explaining how to make money in the stock market. Apparently the authors plan to make their money selling books telling other people how to profit from the stock market. Why don't these authors forget about the books and make their money in the stock market?

No one can real forecast the stock market hundred percent correct. Maybe their stock market systems don't work. It's a big risk to put all money in the stock market instead of take the fixed income from selling book.

3. A car manufacturer is considering locating an assembly plant in your region. List a simple, a intermediate and a complex problem associated with this proposal.
Simple problem: Will they hire employee around my region?
Intermediate problem: Will the new assembly plant affect be a big competition with my current workplace.
Complex problem: Should I quit my current job to join their company?

4. If there are only two alternatives available and both are unpleasant and undesirable and there is no do nothing option, what should you do?

I will choose the one with less impact to me.

5. In the 1970's the Ford Motor Company sold its subcompact Pinto model with known design defects. In particular, the gas tank's design and location led to rupture, leaks and explosion in low-speed, rear-impact collisions. Fifty-nine people burned to death in Pinto accidents. In a cost-benefit analysis weighing the cost of fixing the defects ($11 per vehicle) versus the firm's potential liability for lawsuits on behalf of accident victims. Ford had placed the value of a human life at $200,000. Ford eventually recalled 1.4 million Pintos to fix the gas tank problem for a cost around $35 million. In addition the automaker ultimately paid out millions more in liability settlements and incurred substantial damage to its reputation.
a. Critique Ford's actions from the perspective of the NSPE code of Ethics.

Hold paramount the safety, health, and welfare of the public.

Avoid deceptive acts.

Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession

b. What should engineers do when the product they are designing has a known safety defect with an inexpensive remedy?

Engineer should report the problem to their project manager or any superior. Mention how serious consequences may be if they don’t fix it. The company will lose ton of money compare with this inexpensive repair.