

Chapter 9 Homework Problems.

- 1) The Ellerson Furniture Company must purchase a new polisher. The cash flows for the two alternatives are presented below. Both alternatives have a 5 year useful life. If the company's MARR is 9%, which set-up should be used?

	First Cost	Annual operating cost
True Grit	\$6800	\$1500
Smoothest	\$4700	\$2000

Determine the EAC for each alternative. What is the savings associated with the preferred alternative?  
*(Problem Hint: This is similar to problem 9.4 in textbook where they give you an answer.)*

- 2) Two designs for water towers are being considered with different exterior materials. Design A has a useful life of 30 years and design B has a useful life of 20 years. The cash flows for each alternative are presented below (dollars in thousands, K). If the company's MARR is 10%, which design should be selected to minimize costs?

	First Cost	Annual operating cost
Design A	\$2100 K	\$25 K
Design B	\$1800 K	\$40 K

Determine the EAC of each alternative and the present worth over the least common multiple of lives. Which is the best alternative.  
*(Problem Hint: PW of design B over least common multiple is -2507K.)*

3. The Get Smart company has 5 mutually exclusive projects under consideration with costs as shown below. Each of the projects has a 10 year life and the company MARR is 10%. Using incremental IRR analysis, which of the projects should be done.

Project	First cost	annual benefits
A	\$45,000	\$8500
B	\$36,000	\$6500
C	\$56,000	\$9400
D	\$52,000	\$9500
E	\$41,000	\$7200

Determine the incremental IRR for each comparison made. Which project should be selected.  
*(Problem Hint: Incremental IRR for E-B = 6.64%.)*