

Practice Problems:

1. Lubbock County is planning to construct a bridge across the Rio de Lubbock to facilitate afternoon skiing in the El Dusto Ski Basin. The first cost for the bridge will amount to \$6,500,000. Annual maintenance and repairs will amount to \$25,000 for each of the first five years, to \$30,000 for each of the next ten years and to \$35,000 for each of the next five years. In addition a major overhaul costing \$500,000 will be required at the end of the tenth year. Use an interest rate of 5% and determine the equivalent uniform annual cost for a 20-year period.

2. Given 2 alternatives:

	<b>A</b>	<b>B</b>
First cost	\$4,000	\$6,000
Annual cost	1,000	500
Annual benefit	2,000	2,200
Life, years	4	10
Salvage	3,000	1,000

Assuming that alternatives are replaced at the end of their useful life, determine the better alternative using annual cash flow analysis at an interest rate of 9%.

3. What is the equivalent uniform annual cost of two hydraulic systems with expected 30-year life with the following features? The first hydraulic system requires annual operating, maintenance and repair cost of \$1,000 and it has a useful life of 15 years. Its initial cost is \$35,000 and it has a salvage value of \$6,000 at the end of its useful life. The second hydraulic system has an initial cost of \$18,000 and is expected to be unserviceable after ten years. It requires \$500 annual operating, maintenance and repair cost and has a zero salvage value after its 10-year useful life. Assume the interest rate is 7%. Present the economic equivalence function required, showing the functional notation and then the numerical value.