HW 2

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2-10:

a) $50,000/750 = $66.67/unit
b) 2* 500 + 250 = 1250
$50,000/1250 = $40/unit past 500 units, therefore $80/unit for the first 500 units
c) The 600th unit would have costed $40

2-24:

a) Opportunity
b) Book
c) Cash
d) Cash
e) Opportunity
f) Sunk
g) Opportunity

2-34:

a) Book cost = $13,000 - $7,000 = $6,000
b) Opportunity Cost = $4,000
c) $6000 - $4000 - $500 = $1,500 cheaper with stainless steel pump

2-41:

a) gallons = 500m/25mpg = 20 gallons
cost of gas = 20 gallons * $4/gallon = $80
cost of maintenance = 500m * $0.65/m = $325
total cost = $405
b) 75 years * 365 days/year * 24 hours/day = $657,000 hours
c) circumference = 2 * pi * 2000 miles = 12566 miles
Travel time = 12566 miles/100 miles/day = 126 days
d) Area of U.S. = 50 * 200 * 390 = 3,900,000 miles^2

2-44:

a) Cost = (50 *$125) + ($7,500 * 100) + $10,000 = $766,250
b) Including profit margin = $766,250 *1.35 = $1,034,438

2-49:

a) (Cost of A/Cost of B) = (size of A/size of B)^1.13
Cost of new lagoon = (1.65^1.13)*$2.3 million = $4.05 million
b) A sewage lagoon is a large pond into which the sewage or effluent from the sewage system flows. Lagoon systems have a poor ability to control algae and suspended solids in warm weather, and poor efficiency in removing pollution load.

2-60:

b = log(0.75)/log(2) = -0.415
T10 = 260 hours = T1* 10^b = T1 (0.3846)
T1 = 676 hours

T20 = T1*20^(-0.415) = 195 hours

2-75:

Cash Flow Table		
Year	**Calculation**	**Amount**
0	Cash Outflow	$7,500
1	Cash Outflow = $8,000 installment + $1,000 maintenance	$9,000
2	Cash Outflow = $8,000 installment + $2,000 maintenance	$10,000
3	Cash Outflow = $8,000 installment + $2,000 maintenance	$10,000
4	Cash Inflow = $12,000 sale price - $2,000 maintenance	$10,000

2-80:

Without LEED Score = 114.28
With LEED Score = 114.69
Therefore the firm's bid should be developed with the platinum LEED design