**HW 2**

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EECE 490B

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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:

1. Book cost = $13,000 - $7,000 = $6,000
2. Opportunity Cost = $4,000
3. $6000 - $4000 - $500 = $1,500 cheaper with stainless steel pump

2-41:

1. gallons = 500m/25mpg = 20 gallons

cost of gas = 20 gallons \* $4/gallon = $80

cost of maintenance = 500m \* $0.65/m = $325

total cost = $405

1. 75 years \* 365 days/year \* 24 hours/day = $657,000 hours
2. 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:

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

2-49:

1. (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

1. 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