MSCI 261 A3

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[redacted]

1. a) There are 5 sign changes in total.

The sign changes occur from:

0 - 1st year
1 - 2nd year
12 - 13th year
13 - 14th year
24 - 25th year

There could be up to 5 positive IRRs.

b) refer to attached

Using the spreadsheet, I estimate that the values for the positive IRR's are:

7.7% and 101.9%

It cannot, because there are two conflicting IRRs.

c) FW(positive net cash flows) = FW(negative net cash flows)

$$\sum \text{revenue}(F/P, 23\%, n) = \sum \text{expense}(F/P, i^*, n)$$

$$i^* =$$

2. Accumulated depreciation = 220320 + 76480

= 296800

Equipment Current Value = 683400 − 296800

= 386600

Sales = 518600 + 128400

= 647000

Total expenses = 518600 − 173720

= 344880

Utilities & property tax = 344880 − 162300 − 39760 − 18940 − 76480 − 24300

= 23100

profit After Taxes = 173720 − 34744

= 138976

Total Assets = 42300 + 75400 + 26600 + 94300

+ 434000 + 386600

= 1063100

Accumulated Retained Earnings = $\frac{138976}{2}$ + 201212

= 270700

Total Owner's Equity = 100000 + 150000 + 270700

= 520700

Total Liabilities & Owner's Equity = 542400 + 520700

= 1063100

3. a) $EAC(n) = PW(n)(A/P, 12\%, n)$

$= (15000 - 15000(1-0.25)^n (P/F, 12\%, n) + 16000(P/A, 35\%, 12\%, n-2)(P/F, 12\%, 2))(A/P, 12\%, n)$