

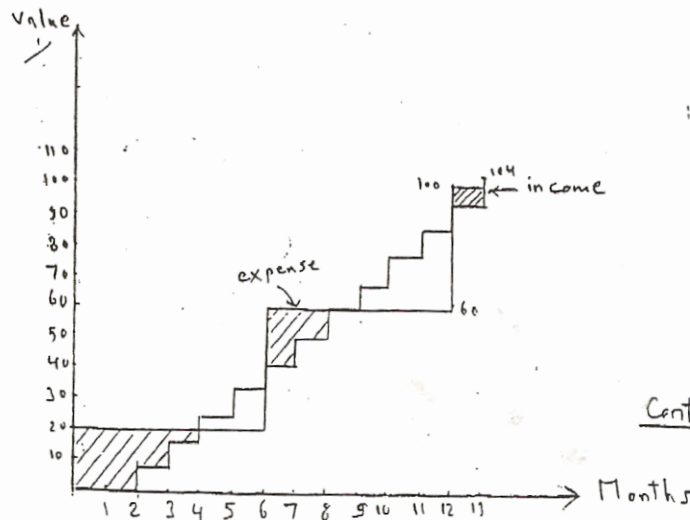
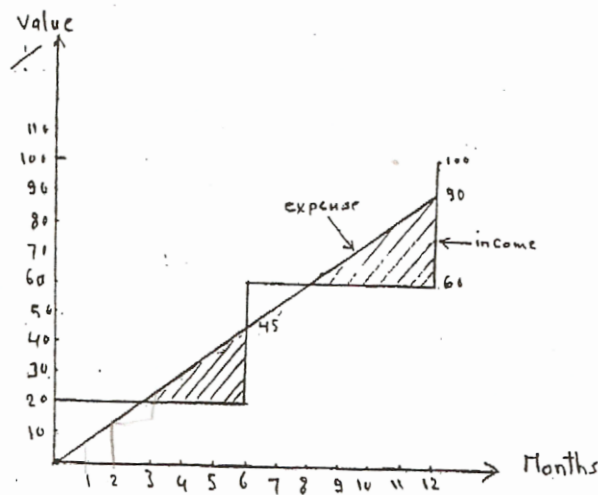
In a measurement contract, the contractor decides to subcontract electromechanical works using a lump sum contract. The duration of the subcontracted work is 12 months. The subcontractor will receive his revenue (without delay) as follows:

- 20% advance payment
- 40% after finishing 50% of the works (after 6 months)
- 40% on completion

Assume that: 1) the contractor is paid for work completed during a month after one month delay. 2) work of the subcontractor is uniformly distributed over duration of the works. 3) the subcontractor markup is 10% of his tender value and the contractor markup for the subcontracted work is 4% of the subcontractor tender value.

It is required to :

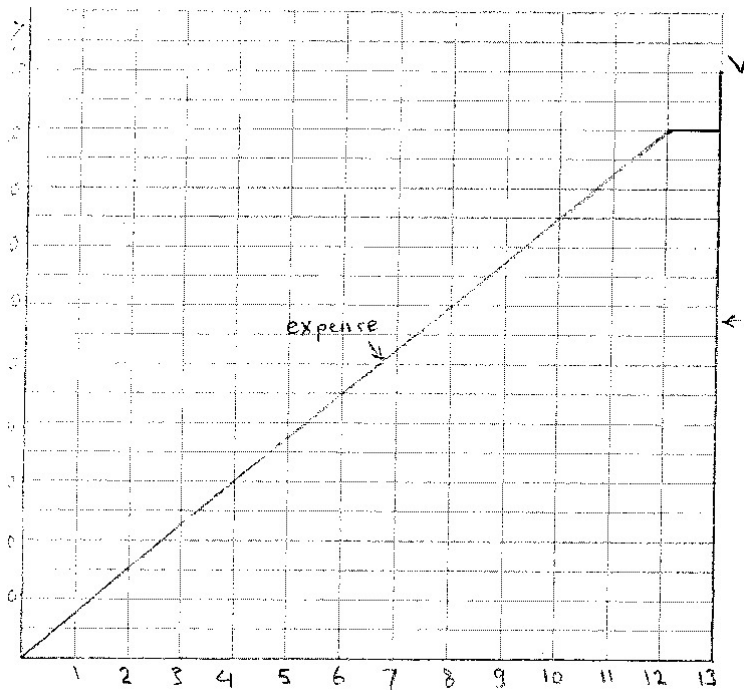
- a) Draw to scale the income and expense curves for the subcontractor.
- b) Draw to scale the income and expense curves for the contractor to cover the subcontracted work.
- c) In both a) and b) above, crosshatch areas of negative cash flow.



Question 3 (20% of max. credit)

An electromechanical package of work was subcontracted using a lump sum contract. The duration of the subcontracted work is 12 months. The subcontractor will receive his full revenue on contract completion. A delay of one month is expected between subcontractor revenue and his income. Work of subcontractor is planned to be uniformly distributed over duration of the works. No delay is expected between subcontractor costs and his expenses. The subcontractor markup is 10% of his tender value.

- Draw to scale income and expense curves for the subcontractor.
- Calculate financial charges of the subcontractor in terms of his tender value. Assume investment rate is 12% per annum.



$$\text{Area} = \frac{1}{2} (12) 0.9 V + 0.9 V$$
$$= 6.3 V$$

$$\text{Financial charges} = \frac{6.3 V}{12} (0.12)$$
$$= 6.3\% \text{ of } V$$