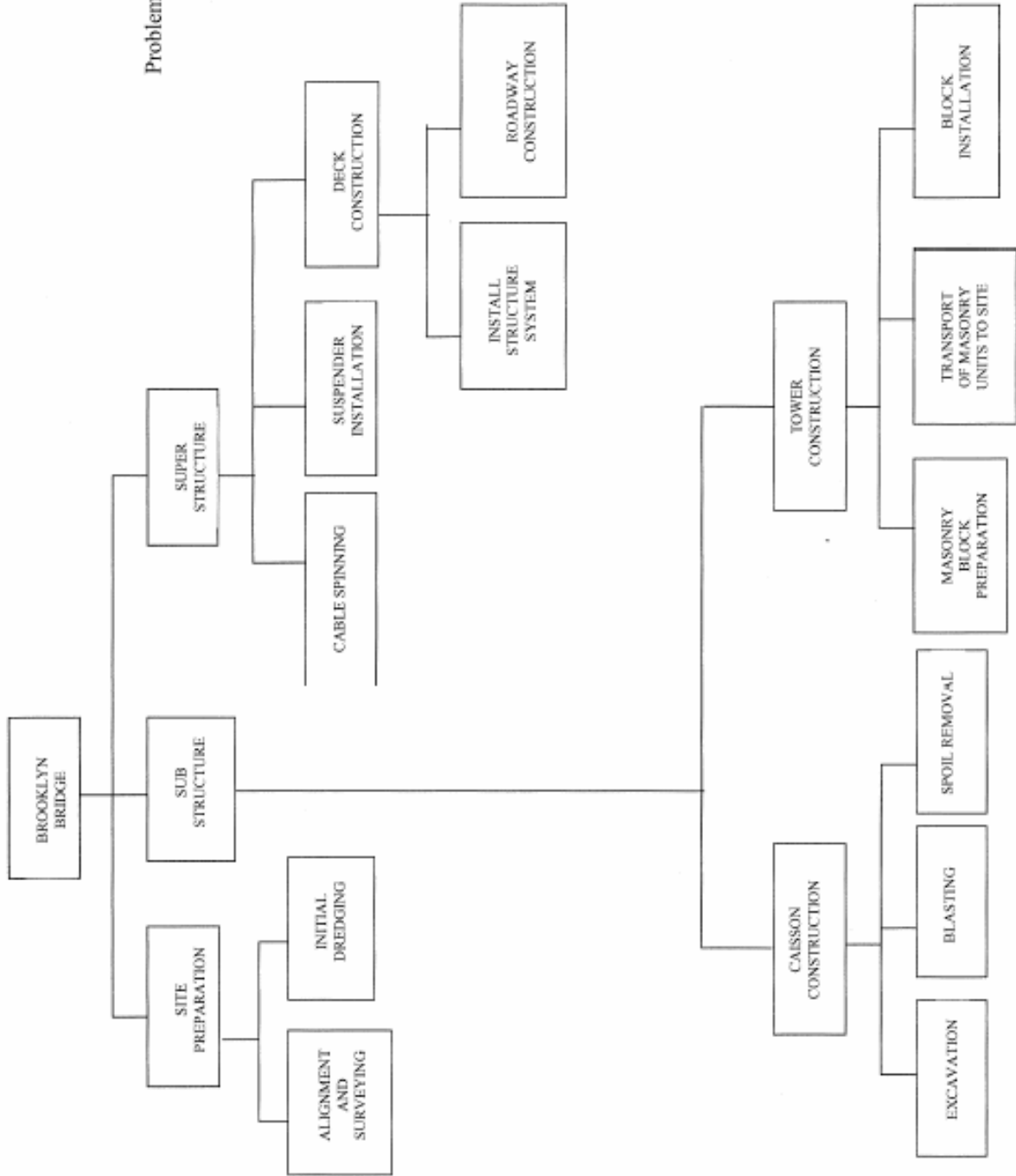
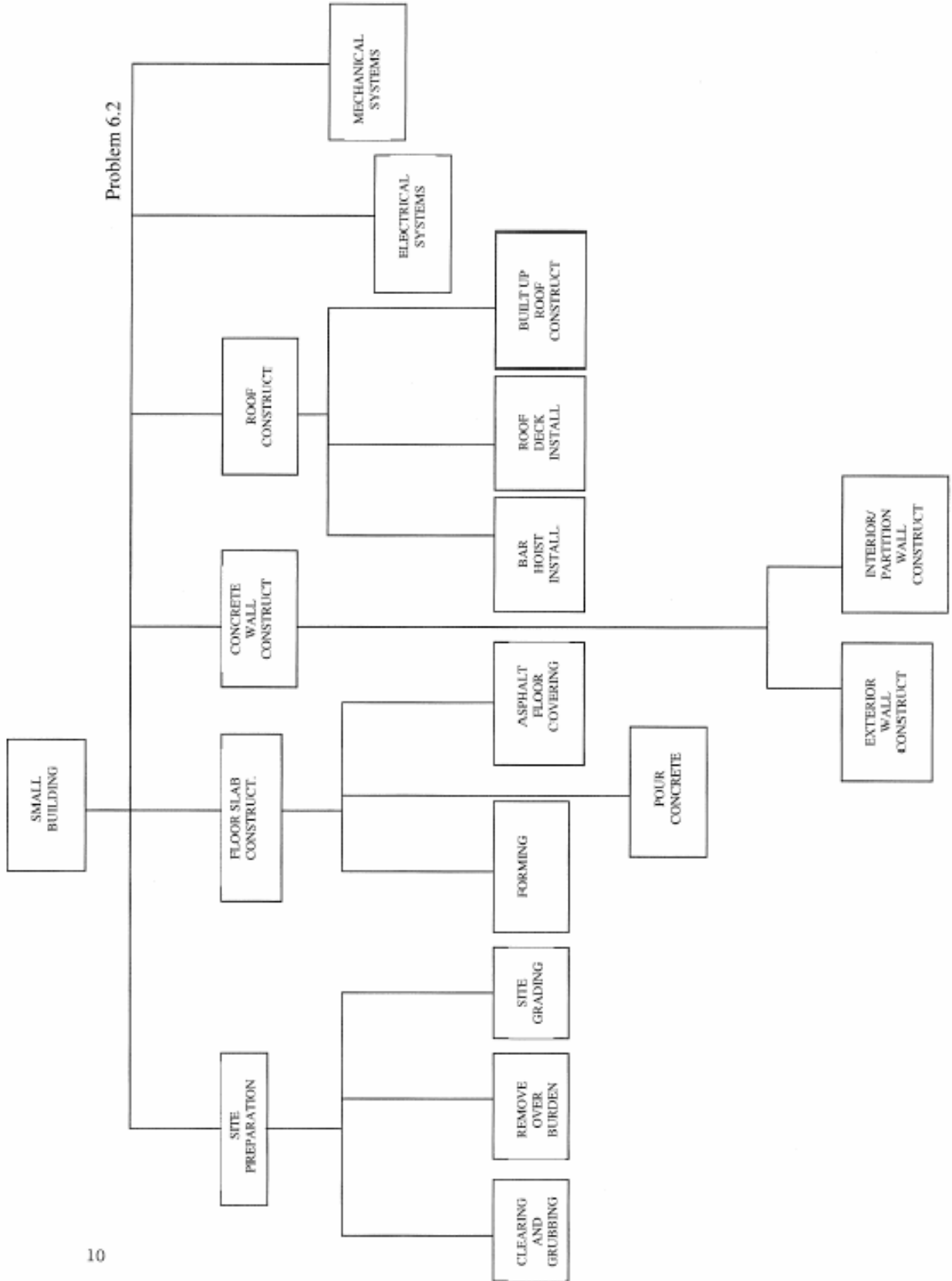


## CHAPTER 5

- 5.1 Sole Proprietorship - owner is liable to extent of personal wealth  
 Partnership - partners liable to extent of personal wealthier (exception - limited partner is limited in liability to amount of his participation.  
 Corporation - no personal liability, liability limited to company assets.
- 5.2 Corporation – Requires issuance of stock certificates and registration w Secretary of State in jurisdiction in which corporation is formed.
- 5.3 (a) General Partnership  
 (b) Sub-Partnership  
 (c) Limited Partnership
- 5.4 Advantages:  
 (1) Limitation of liability  
 (2) Ability to raise capital for expansion, purchase of equipment, is very good
- Disadvantages:  
 (1) Complicated to establish a corporation and legal counsel is usually needed to file appropriate documents, etc.  
 (2) Management is more difficult due to more complex organization structure. The president and chief executive officers (CEO) must seek approval from the stockholders to undertake borrowings for company expansion.
- 5.5
- | <u>Proprietorship</u> | <u>Corporation</u>                | <u>Personal</u> |
|-----------------------|-----------------------------------|-----------------|
| Profits 80,000        | Profits 80,000                    | Income 55,000   |
| Deducts 7,000         | Expenses 55,000                   | Deducts 7,000   |
| Taxable Income 73,000 | Net 25,000                        | 48,000          |
| Tax = 17,000          | x 0.25                            | x 0.2           |
|                       | Tax = 6,250                       | 9600            |
|                       | Total Tax = 6,250 + 9600 = 15,850 |                 |
- Yes, Jack should incorporate since 15,850 (Corporation)  
 < 19,000 (Proprietorship)
- 5.6 Foreign Corporation indicates that the corporation of interest is incorporated & registered in a jurisdiction (e.g. state or country) other than the one in which it is operating. Therefore, it is "foreign" to the jurisdiction in which it is working and may be subject to certain taxes or restrictions not required of corporations incorporated within that jurisdiction (e.g. domestic corporation).
- 5.7 Losses incurred under Subchapter S Corporations can be applied to other person's income to reduce personal tax liability.

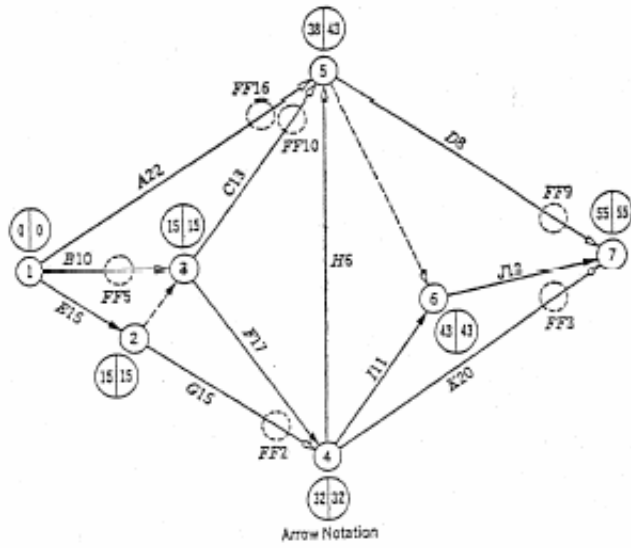
Problem 6.1





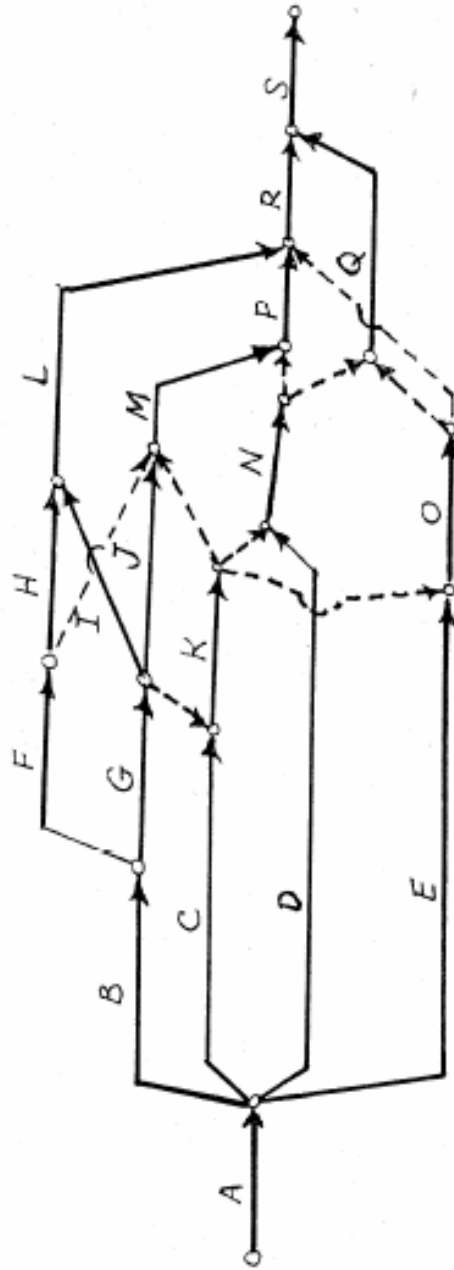
6.3 Subcontracting Plan for Small Day Care Center

1. Site Drainage Constrant
2. Floor Slab Concrete
3. Frame Installation
4. Roof Contract
5. Elec Contract
6. Mechanical Contract
7. Specialty Equip Contract
8. Mill Work Contract

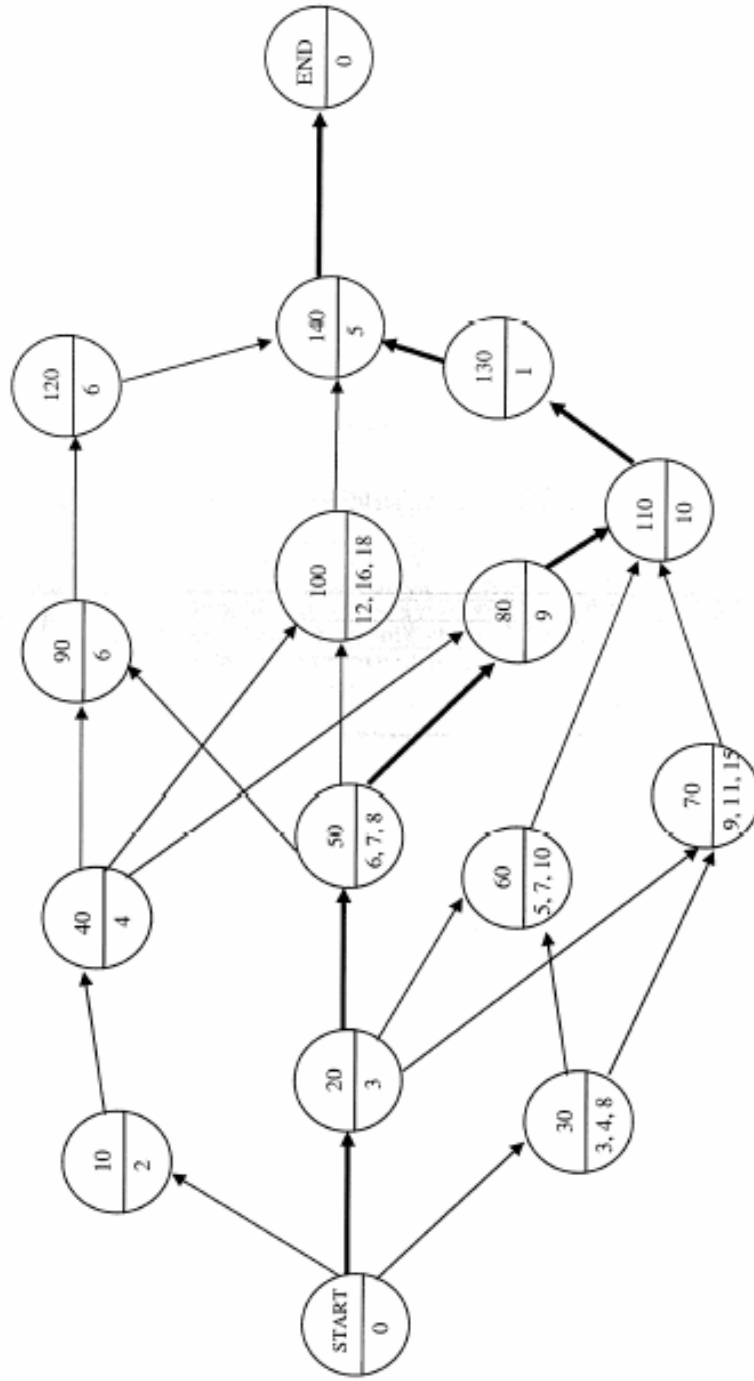


Activity	Total Float	Free Float	Interfering Float	Status
A	21	16	5	
B	5	5	0	
C	15	10	5	
D	9	9	0	Critical
E	0	0	0	Critical
F	0	0	0	
G	2	2	0	
H	5	0	5	Critical
I	0	0	0	Critical
J	0	0	0	Critical
K	3	3	0	

Arrow Notation Solution Problem 7.2



8.1



Critical Path Activities: 20, 50, 80, 110, 130, 140

8.1 Continued

Project Duration (Expected) = 35 weeks

Critical Activity	$t_E$	$\sigma_{tc}$	$V_{tc}$
50	7.0	0.33	0.1089

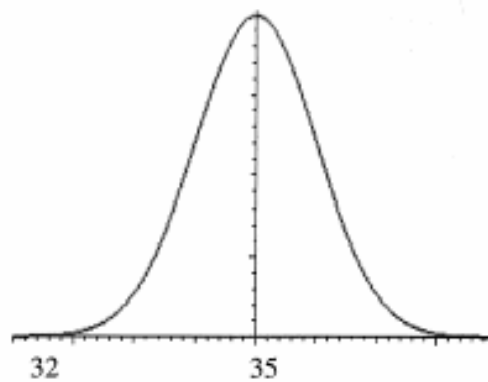
Probability of completing in 32 weeks

$$Z = 35 - 32 / 0.33 = 3 / 0.33 > 3.0$$

So the probability of completion in 32 weeks is almost 0%.

Probability of completion between 34 and 36 weeks

$$\begin{aligned} P(34 \leq X \leq 36) &= P(z = (36 - 35)/0.33) + P(z = (34 - 35)/0.33) \\ &= P(z = 3) + P(z = -3) = 0.997 \\ &= 99.7 \% \end{aligned}$$





## Problem 8.2 Time Estimates for Pipeline Construction Project

Activity	Description	$t_a$	$t_m$	$t_b$	$t_e$	$\sigma_{te}$	$v_{te}$
*2	Lead time	10	10	10	10	0	0
*3	Move to site	18	20	22	20	0.67	0.44
4	Obtain pipes	20	30	100	40	13.33	177.59
5	Obtain valves	18	20	70	28	8.67	75.17
*6	Lay out pipeline	6	7	14	8	1.33	1.77
9	Cut specials	7	9	17	10	1.67	2.77
*7	Dig trench	20	25	60	30	6.67	44.44
8	Prepare valve chambers	17	18	31	20	2.33	5.44
*10	Lay pipes	18	20	46	24	4.67	21.77
11	Fit valves	8	10	12	10	0.67	0.44
*12	Concrete anchors	11	12	13	12	0.33	0.11
*15	Backfill	8	10	20	11.3	2.00	4.00
13	Finish valve chambers	8	8	8	8	0	0
14	Test pipeline	5	6	7	6	0.33	0.11
*16	Clean-up	2	3	10	4	1.33	1.77
*17	Leave site	3	4	5	4	0.33	0.11

CHAPTER 9

9.1

Month	1	2	3	4	5	6
Subtotal	69,000	21,800	17,800	40,900		
Mark-up	8,280	2,616	2,136	4,908		
Total Worth	77,280	24,416	19,936	45,808		
Retainage	7,728	2,442	1,994	4,581		
Payment rec'd	-	-	69,552	21,974	17,942	57,972
Total cost	69,000	90,800	108,600	149,500	149,500	149,500
Total Worth	77,280	101,696	121,632	167,440	167,440	167,440
Total retainage	7,728	10,170	12,164	16,745	16,745	0
Total payment	-	-	69,552	91,526	109,468	167,440
Overdraft	-69,000	-91,835	-41,461	-61,009	-43,982	+13,330
Finance charge	-1,035	-1,378	-622	-915	-660	
	-70,035	-93,213	-42,083	-61,924	-44,642	+13,330

Peak financial requirement = 93,213 Ans.

Month	Direct/Indirect Costs	Interest	Payment	Net	7%PW	7.5%PW
1	69,000	1,035	0	-70035	-65453	-65149
2	21,800	1,378	69,552	+46374	+40504	+40128
3	17,800	622	21,974	+3552	+2899	+2859
4	40,900	915	17,942	-23873	-18213	-17876
5	0	660	57,972	+57352	+40905	+39963
					+642	-75

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$$\text{ROR} = 0.07 + \frac{642}{642 + 75} (.005) = 0.0745 \text{ or } 7.45\%$$

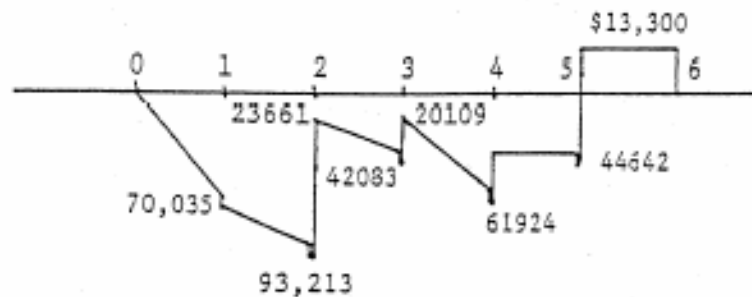
$$\begin{aligned} \text{Average overdraft} &= \frac{69,000 + 91,835 + 41,461 + 61,009 + 43,982}{5} \\ &= \$61,457 \end{aligned}$$

$$\begin{aligned} \text{Average financial requirement} &= \frac{70,035 + 93,213 + 42,083 + 61,924 + 44,642}{5} \\ &= \$62,379 \end{aligned}$$

Average overdraft should actually be calculated over 6 months because we get 1 last payment at the end of month 6.

Note: We might have two R.O.R. because the sign changes more than once.

$$\begin{array}{c} - - + - + + \\ 1 \ 2 \ 3 \end{array}$$



Note the diagram is not on scale