

Assignment 1

Due at beginning of class January 29, 2015

Please do all questions in order. Marks in parenthesis are the maximum mark for answers to the questions. The questions are based on material in Text: Chapter 2, 3 and 5 (Project Management) and additional project management material.

1. Some data from the financial statements of K-Mart and Walmart for 2000 follow. From this information, which of the retailer stores has been more successful? Justify your answer. All figures are in millions of US dollars. (8)

	<u>K-Mart</u>	<u>Walmart</u>
Inventory	6,500	19,793
Cost of Goods Sold	29,732	129,664

Answer

SOLUTION: Walmart has been more successful than K-Mart. An answer here should discuss mainly the issue of inventory turn-over. For K-mart, the inventory turnover is

$$\frac{29,732}{6,500} = 4.57 \text{ times/year,}$$

and for Walmart, it is

$$\frac{129,664}{19,793} = 6.55 \text{ times/year,}$$

Alternatively, you can say that Kmart has $365/4.57 = 79.8$ days of inventory and Walmart has $365/6.55 = 55.7$ days of inventory.

2. The Ministry of Health Services, British Columbia, announced the following data:

<u>Average Patients Waiting</u>	<u>Average Wait Time</u>	<u>Average surgeries performed</u>
414	64 days	3.5 per day

Based on your understanding of Little's Law, are the above three reported numbers consistent? (6)

Answer

SOLUTION: Given above data, we can assume the following:

$$\begin{aligned}\text{Average Inventory} &= 414 \\ \text{Average Throughput Rate} &= 3.5 \text{ per day}\end{aligned}$$

By Little's Law, this gives us

$$\text{Average Flow Time} = \frac{414}{3.5 \text{ per day}} = 118.3 \text{ days}$$

But according to the table, the flow time = 64 days. Thus, the report is not consistent with Little's Law.

3. Why would subcontractors for a government project want their activities on the critical path? Under what conditions would they try to avoid being on the critical path? (6)

Answer:

A subcontractor might want his activities on the critical path in situations where cost incentives are provided for early project completion. Since the critical path ultimately determines project length, it stands to reason that activities on the path would be the ones that would draw additional funds to expedite completion. A subcontractor might want his activities off the critical path because of some error on his part or because he doesn't want to be bothered by the close monitoring of progress which often goes with critical path activities.

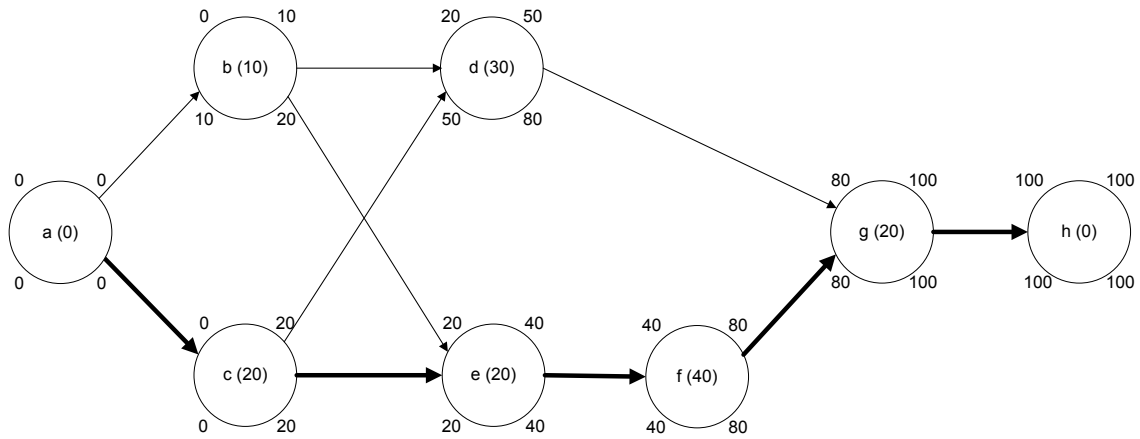
4. The home office billing department of Winnipeg Retailors Inc.. a chain department store prepares monthly inventory reports for the use by the store's purchasing agents, given the following information, use the critical path method to determine:

a. How long the total process will take?(4)

b. Which job can be delayed without delaying the early start of any subsequent activity.(8)

		Immediate Predecessor s	Time (Hours)
a	Start	-	0
b	Get computer printout of customer purchases	a	10
c	Get stock records for the month	a	20
d	Reconcile purchase printouts and stock records	b,c	30
e	Total (aggregate) stock records by department	b,c	20
f	Determine record quantities for coming period	e	40
g	Prepare stock reports for purchasing agents	d,f	20

Answer:



a. 100 Hours. (4)

b. b and d are not on the critical path. Their start can be delayed without delaying the start of any subsequent activities. (8)

Total 32