CHAPTER 7

**1) Given the following information for a one-year project, answer the following questions. Recall that PV is the planned value. EV is the earned value, AC is the actual cost, and BAC is the budget at completion.**

**PV = $22,000**

**EV = $20,000**

**AC = $25,000**

**BAC = $120,000**

**a. What is the cost variance, schedule variance, cost performance index (CPI), and schedule performance index (SPI) for the project?**

Cost Variance is calculated as EV-AC and indicates the difference between the budgeted cost and the actual cost of completed work.

Cost Variance = EV-AC = $20,000 – $25,000 = - $ 5,000

Schedule Variance is calculated as EV-PV and indicates the degree to which the value of completed work differs from that planned.

Schedule Variance = EV-PV = $20,000 - $22,000 = -$ 2,000

Cost Performance Index (CPI) = EV/AC = 20,000/25,000 = 0.8

Schedule Performance Index = EV/PV = 20,000 / 22,000 = 0.9

**b. How is the project doing? Is it ahead or schedule or behind schedule? Is it under budget or over budget?**

The project is not doing well. Because the Cost variance and Schedule variance are negative. A negative Schedule variance means the project is behind schedule and a negative Cost variance means the project is over cost.

**c. Use the CPI to calculate the estimate at completion (EAC) for this project. Is the project performing better or worse than planned?**

EAC = BAC/CPI = $ 120,000/.8 = $ 150,000

The project is performing worse than planned because the new estimate is $150,000 which is $30,000 more than initial estimate.

**d. Use the schedule performance index (SPI) to estimate how long it will take to finish this project.**

Estimated time to complete = Time estimate / SPI = 12 months / .9 = 13.3

The project is projected to take 13.3 months to complete so it is estimated that it will take 1.3 months more than planned.