

Problem 10-34

Given the following table:

Claim Type	Number of Claims to Process (Work Order Quantity)	Setup (Changeover) Time per Claim Type (hours)	Processing Time per Claim (hours)
Cancer treatment	17	2.9	1.1
Spinal injury	11	1.3	1.6
Hip replacement	9	2.5	0.6

In order to decide if 40 hours is enough capacity, we need to calculate the workload capacity for each claim type. To do this, we can use the formula:

$$\text{Capacity Required } (C_i) = \text{Setup Time } (S_i) + [\text{Processing Time } (P_i) \cdot \text{Order Size } (Q_i)]$$

For CT Claims Workload, we have:

$$2.9 + (1.1 \cdot 17) = 21.6 \text{ hours}$$

For SI Claims Claims Workload, we have:

$$1.3 + (1.6 \cdot 11) = 18.9 \text{ hours}$$

For HR Claims Claims Workload, we have:

$$2.5 + (0.6 \cdot 9) = 7.9 \text{ hours}$$

Calculating the sum of these workloads gives us a total time of $(21.6) + (18.9) + (7.9) = 48.4$ hours, which exceeds the capacity of (40) hours. Therefore, the work cannot be completed using regular time hours.