a) $D(CPU_1)$

$$= V(CPU_1) * S(CPU_1)$$

$$= \frac{C(CPU_1)}{C(0)} * \frac{B(CPU_1)}{C(CPU_1)}$$

$$= \frac{B(CPU_1)}{C(0)}$$

$$= \frac{127}{145} = 876ms$$

b) Service time(Disk_2) $= \frac{U(Disk\_2)}{X(Disk\_2)}$

$$U(Disk_2) = \frac{B(Disk\_2)}{T} = 286/600$$

$$X(Disk_2) = \frac{C(Disk\_2)}{T} = 1250/600$$

Service time(Disk_2) $= 286/1250 = 229ms$

c) $System\ throughput = \frac{C(0)}{T} = \frac{145}{10*60} = 0.241$

$$D(CPU_1) = \frac{U(CPU_1)}{throughput} = \frac{B(CPU_1)}{C(0)} = \frac{127}{145}$$

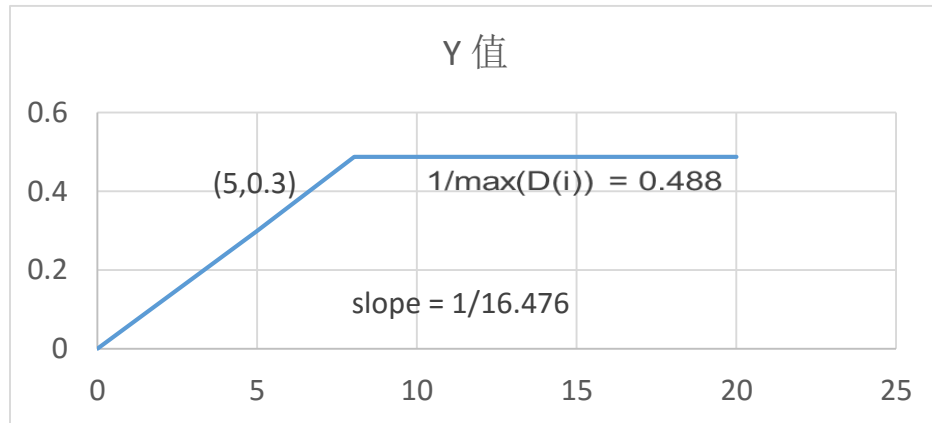$$D(CPU_2) = \frac{U(CPU_2)}{throughput} = \frac{B(CPU_2)}{C(0)} = \frac{297}{145}$$

$$D(Disk\_1) = \frac{U(Disk\_1)}{throughput} = \frac{B(Disk\_1)}{C(0)} = \frac{116}{145}$$

$$D(Disk\_2) = \frac{U(Disk\_2)}{throughput} = \frac{B(Disk\_2)}{C(0)} = \frac{286}{145}$$

$$D(Dispatcher) = \frac{U(Dispatcher)}{throughput} = \frac{B(Dispatcher)}{C(0)} = \frac{113}{145}$$

$$Max(D(i)) = D(CPU_2) = \frac{297}{145}$$

$$\sum_{i=1}^{k} D(i) = Think\ time + \frac{127 + 297 + 116 + 286 + 113}{145} = 16.476$$

Y 值

Bound is $\dfrac{N}{\sum_{i=1}^{k} D(i)} = \dfrac{5}{16.476} = 0.3$

d) The maximum possible throughput is 0.3

Minimum possible response time $= 10 - 1/0.3 = 6.67s$