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Assignment 2

1.8.1

Pentium

V= 1.25

Clock Rate = 3.6GHz

Power = 90 W

90 W = (.5)(Capacitive Load)(1.25)2(3.6e9)

Capacitive load = 3.2e-8

Core I5

V= 0.9

Clock Rate = 3.4GHz

Power = 40 W

40 W = (.5)(Capacitive Load)(0.9)2(3.4e9)

Capacitive load = 2.9e-8

1.8.2

Pentium power total = 100W

Powerstatic/powertotal = 10W/100W = 10%

1:9 ratio

Core i5 total = 70W

40W / 70W = 57%

4:3 ratio

1.8.3

Pentium

P = V \* I = Powerstatic / voltage = 10 / 1.25 = 8A

100(.9) = 90

90 = 8V + (.5)(3.6e9)(3.2e-8)V2

== 1.18 V

Core i5

P = V \* I = Powerstatic / voltage = 30 / .9

70(.9) = 63

63 = 33.3 V + (.5)(2.8e-8)(3.4e9)

== 0.84V

1.13.1

250 = 70 + 85 + 40 + 55

70(.8) = 56

56 + 85 + 40 + 55 = 236

1.13.2

250(.8) = 200

70/250 = 28%

200(.28) = 56s

70 – 56 = 14s

It is reduced by 14s down to 56

1.13.3

200 = 70 + 85 + 55 + branch

Branch = -10s

No it cannot