CAS CS 350 HW3

Andrea Lopez

TOTAL POINTS

97 / 100

QUESTION 1

1Q140/40

√ - 0 pts Correct

a)

- 2 pts Minor error in calculation
- 5 pts Incorrect answer but some work shown
- 8 pts Missing answer/ No attempt to calculate Ts

b)

- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 2 pts No attempt to calculate Tq
- 3 pts No work shown

c)

- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

d)

- **0 pts** Incorrect answer due to previous mistakes
- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

e)

- 0 pts Incorrect answer due to previous mistakes
- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

f)

- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

a)

- 2 pts Minor error in calculation

- 4 pts Incorrect answer but some work shown
- 6 pts No work shown

h)

- 2 pts Minor error in calculation
- 4 pts Incorrect answer but some work shown
- 6 pts Incorrect answer with wrong logic
- 8 pts No work shown

i)

- 1 pts Minor error in calculation
- 2 pts Error in the comparison/No comparison
- 3 pts No work shown

QUESTION 2

2 Q2 30 / 30

√ - 0 pts Correct

a)

- O pts Correct
- 2 pts minor error in calculation
- 5 pts major error in calculation
- 4 pts correct answer without steps
- 8 pts incorrect answer/missing answer

b)

- 0 pts Correct
- 1 pts minor error in calculation
- 4 pts major error in calculation
- 3 pts correct answer but missing steps
- 6 pts incorrect answer/answer not provided

C)

- 0 pts Correct
- 1 pts calculation error
- 2 pts missing/incorrect reasoning
- 3 pts answer not provided

d)

- 0 pts Correct
- 2 pts Minor calculation error
- 6 pts Major calculation error
- **5 pts** correct answer but missing steps
- 10 pts incorrect/missing answer

e)

- 0 pts Correct
- 1 pts Calculation error/missing answer for "by how much?"
 - 2 pts missing/incorrect reasoning
 - 3 pts no answer provided

QUESTION 3

3 Q3 27 / 30

- 0 pts Correct

a)

√ - 0 pts Correct

- 1 pts calculation error/missing steps
- 3 pts incorrect/missing answer

b)

- **0 pts** Correct
- √ 3 pts Minor calculation error
 - 6 pts Major calculation error
 - 8 pts Incorrect reasoning
 - 12 pts missing/incorrect answer

c)

√ - 0 pts Correct

- 1 pts Calculation error
- 3 pts Missing/incorrect answer

d)

√ - 0 pts Correct

- 2 pts Minor calculation error/missing answer for

"by how much"

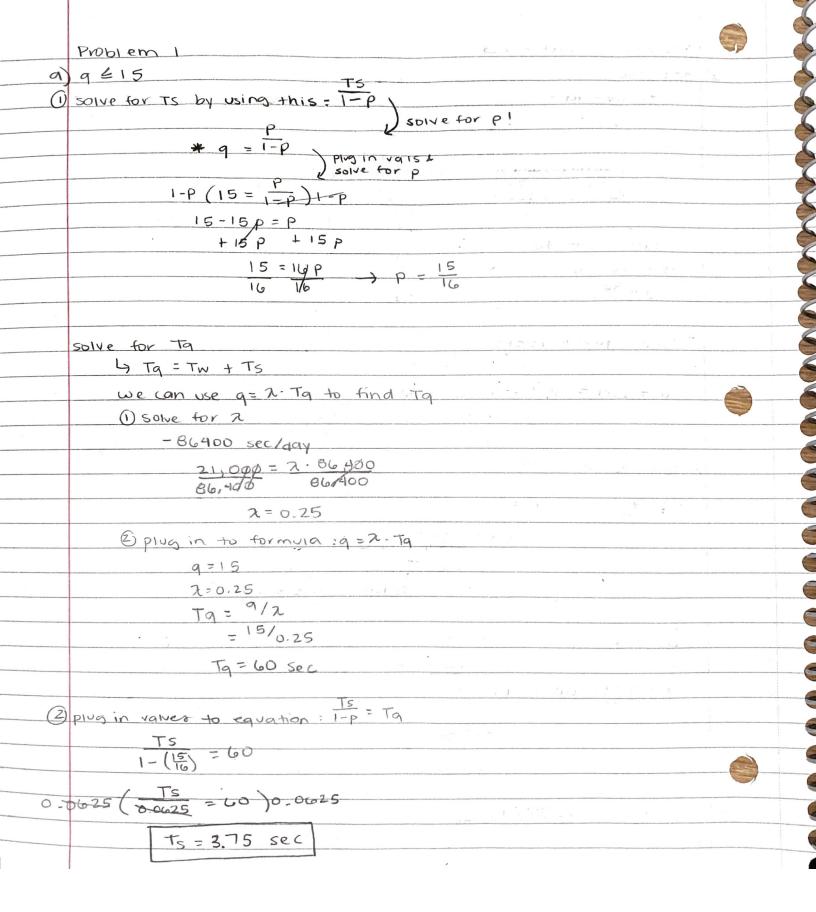
- 6 pts Major calculation error/missing steps
- 5 pts Correct answer with no steps shown
- 10 pts missing/incorrect answer

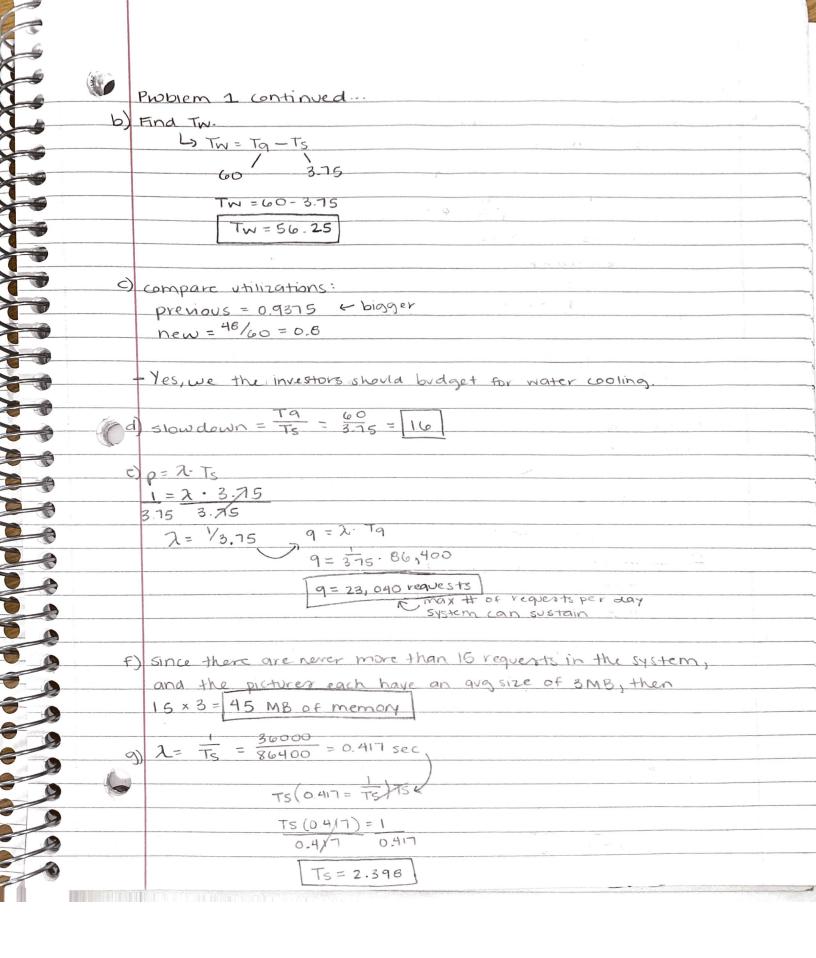
e)

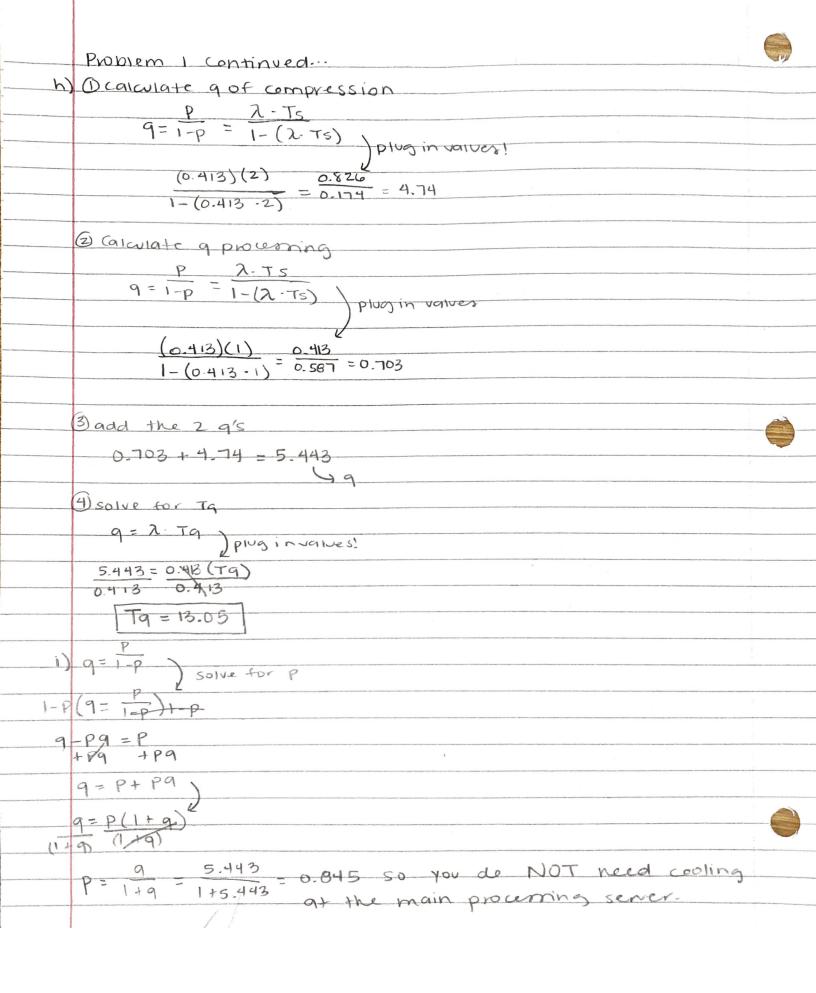
√ - 0 pts Correct

- 1 pts Calculation error

- 2 pts Missing/incorrect answer
- 1 this is the right lambda to use!







1Q140/40

√ - 0 pts Correct

a)

- 2 pts Minor error in calculation
- 5 pts Incorrect answer but some work shown
- 8 pts Missing answer/ No attempt to calculate Ts

b)

- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 2 pts No attempt to calculate Tq
- 3 pts No work shown

c)

- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

d)

- 0 pts Incorrect answer due to previous mistakes
- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

e)

- 0 pts Incorrect answer due to previous mistakes
- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

f)

- 1 pts Minor error in calculation
- 2 pts Incorrect answer but some work shown
- 3 pts No work shown

g)

- 2 pts Minor error in calculation
- 4 pts Incorrect answer but some work shown
- 6 pts No work shown

h)

- 2 pts Minor error in calculation
- 4 pts Incorrect answer but some work shown
- 6 pts Incorrect answer with wrong logic
- 8 pts No work shown

- 1 pts Minor error in calculation
- 2 pts Error in the comparison/No comparison
- 3 pts No work shown

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Problem 2
a) 2= 8000 packets/sec
  M = (100,000,000/B)/1024
  M=12,207.031
  TS = 1/M = 1/12,207.03 = 0.00000192
  p = 1. Ts = 0.655
  q = P/1-p = 0.655/(1-0.655) = 0.655 = 1.8986
  To find the packets that are needed, you multiply
   1.8986 × 1024= 1,944.12 bytes
b) Tw = Tq - Ts
   L) Ts = 0.00008192
   L) Tq = 9/2 = 1.8986/8000 = 0.000237
   TW=0-000237 -0.00008192
      TW = 0.000 1554
                                                             The diff bown the 2 time stamps will be (on aug)
   0-0001554 seconds.
c) ND, I don't need to add a fan in my design because
  I would only have to if the utilization is 0.7 or greater,
  but it is 0.655.
d) From Little's Law =
    T9= 1-P (1-0.0655) 0.9345
  Ts1= 1/4 = 1/122,070-313 = 0.000000019
  M=(1,000,000,000/0)/1024
  M = 122,070.313
  P= 2. Ts = 6000 - 0.000000 619 = 0.06 55
                                                        0)
  The get the speedup, you put Ta = 0.000237 = 27.055 s
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1

1

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2

6

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Problem 2 continued ---Problem 2 continued --e) $q = \frac{1-p}{1-p} = 0.0655 / (1-0.0655) = 0.0655 / 0.9345 = 0.0701$ 5 multiply by 1024! - 0.070 1 × 1024 = 71.77 Usubtract from answer in A! -1944.12-71-77 = 1,872.35 bytes THE LONG IN LAND

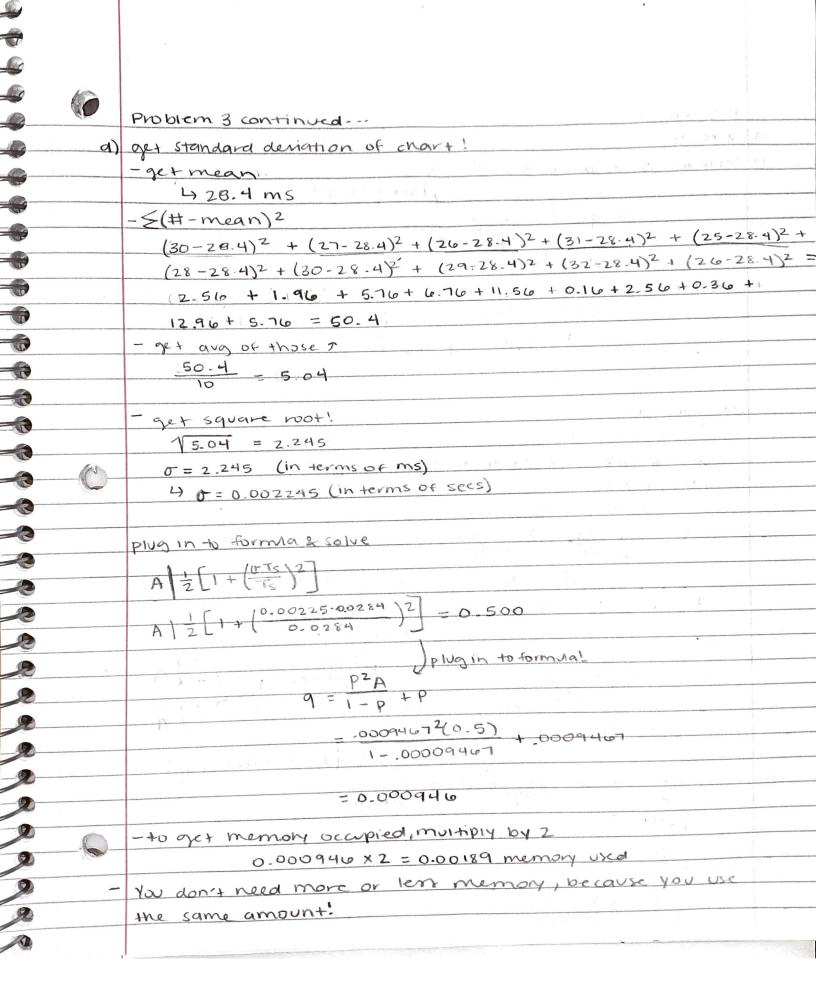
2 Q2 30 / 30

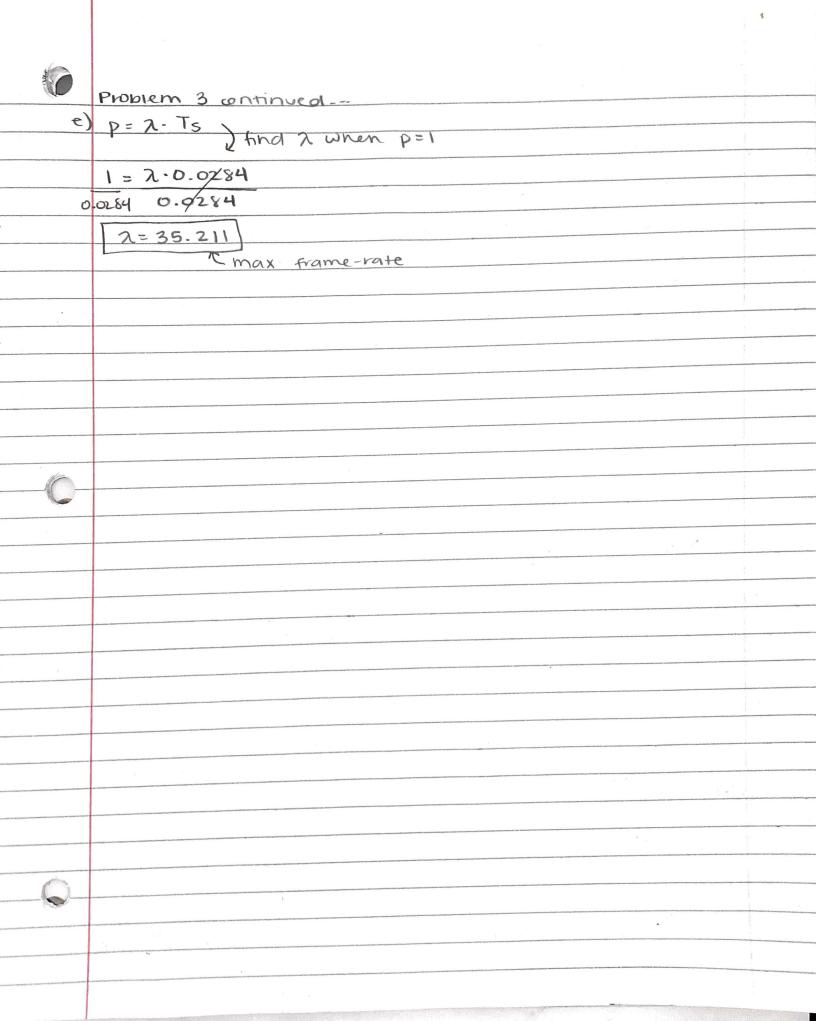
√ - 0 pts Correct

- a)
 - **0 pts** Correct
 - 2 pts minor error in calculation
 - **5 pts** major error in calculation
 - 4 pts correct answer without steps
 - 8 pts incorrect answer/missing answer
- b)
 - 0 pts Correct
 - 1 pts minor error in calculation
 - 4 pts major error in calculation
 - 3 pts correct answer but missing steps
 - 6 pts incorrect answer/answer not provided
- c)
 - 0 pts Correct
 - 1 pts calculation error
 - 2 pts missing/incorrect reasoning
 - 3 pts answer not provided
- d)
 - 0 pts Correct
 - 2 pts Minor calculation error
 - 6 pts Major calculation error
 - 5 pts correct answer but missing steps
 - 10 pts incorrect/missing answer
- e)
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Problem 3 a) add all the times given & divide by the total number of samples (10) 30+27+26+31+25+28+30+29+32+26 = 28.4 ms The avg amount of time it takes to process a single frame is 28.4! b) $\lambda = 3(1)$ frames/sec $TW = \frac{p \cdot Ts}{1-p} \rightarrow Ts = \frac{\lambda}{p}$ 9 = 10 frames we know the equation to use is W= 2. Tw)

5 p. Ts so we need to solve for p using equation for q (q=P) - find p! P=2-Ts P=0.0009467 - find Tw! TW = 0,0009467 0.0264 0.0000269 0.0000269 c) we need to find of! 4 9-2- Ta Ts 0.0264 0.0281 1-P 1-0.000946 - 0.9991 = 0.0284 9=30 × 0.0284 9=0.033 x0-0284 = 0.00095 9=0.000946 -multiply by 2 to get total memory = 0.00189 memory





3 Q3 27 / 30

- 0 pts Correct

a

√ - 0 pts Correct

- 1 pts calculation error/missing steps
- 3 pts incorrect/missing answer

b)

- **0** pts Correct

√ - 3 pts Minor calculation error

- 6 pts Major calculation error
- 8 pts Incorrect reasoning
- 12 pts missing/incorrect answer

c)

√ - 0 pts Correct

- 1 pts Calculation error
- 3 pts Missing/incorrect answer

d)

√ - 0 pts Correct

- 2 pts Minor calculation error/missing answer for "by how much"
- 6 pts Major calculation error/missing steps
- 5 pts Correct answer with no steps shown
- 10 pts missing/incorrect answer

e)

√ - 0 pts Correct

- 1 pts Calculation error
- 2 pts Missing/incorrect answer
- 1 this is the right lambda to use!