CSC165H1 Problem Set 0

Siwei Tang

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1 My Courses

- CSC165H1 S(Winter) Mathematical Expression and Reasoning for Computer Science
  Instructor: Thomas Fairgrieve
- CSC148H1 S (Winter) Introduction to Computer Science
  Instructor: Misha Schwartz
- STA303H1 S (Winter) Methods of Data Analysis II
  Instructor: Liza Bolton
- STA305H1 S (Winter) Design and Analysis of Experiments
  Instructor: Shivon Sue-Chee
- STA355H1 S (Winter) Theory of Statistical Practice
  Instructor: Keith Knight
- STA447H1 S (Winter) Stochastic Processes
  Instructor: Jeffrey Rosenthal

2 Set Notation

$$S_1 \cap S_2 = \{0, 1, 9, 10, 11, 19, 20, 21, 29\}$$

3 Truth Table

p	q	r	p $\vee \neg$q	(p $\vee \neg$ q) $\Leftrightarrow$ (p$\rightarrow$ r)
True	True	True	True	True
True	True	False	True	False
True	False	True	True	True
True	False	False	True	False
False	True	True	False	True
False	True	False	False	True
False	False	True	True	False
False	False	False	True	True

4 Calculation

$$\begin{aligned}\sum_{i=0}^{n-1}(2i+5) &= 5n + \frac{2n(n-1)}{2} \\ &= n^2 - n + 5n \\ &= n^2 + 4n \\ n^2 + 4n &> 165165\end{aligned}$$

by quadratic formula

when n > 404.41,$n^2 + 4n > 165165$

since n is a positive integer
the smallest positive integer n can be is 405