Review for Test 2:

Tuesday, October 8, 2019 11:59 AM

Simplify using the laws of logic

$$(\bar{A} + \bar{B})\,\overline{A+C}$$

method #1:

$(\bar{A} + \bar{B})\,\bar{A}\bar{C}$ — DeMorgan's

$\bar{A}\bar{C}$ — absorption

method #2:

$(\bar{A} + \bar{B})\,\overline{A+C}$

$(\bar{A} + \bar{B})\,\bar{A}\bar{C}$ — DeMorgan's

$\bar{A}\bar{A}\bar{C} + \bar{B}\bar{A}\bar{C}$ — distributive

$\bar{A}\bar{C} + \bar{B}\bar{A}\bar{C}$ — idempotent

$\bar{A}\bar{C}(1 + \bar{B})$ — distributive

$\bar{A}\bar{C} \cdot 1$ — identity

$\bar{A}\bar{C}$ — "

method #3:

$(\bar{A} + \bar{B})\,\overline{A+C}$

$\overline{AB}\;\;\overline{A+C}$ — DeMorgan's

$\overline{AB + A+C}$ — "

$AB + A\bar{C}$

either $\overline{A + C}$ absorption

$\bar{A}\bar{C}$ DeMorgan's

true: If Han did not shoot first (p), then fans are unhappy (q).

a) Han shot first. Are fans happy? Maybe
p is false

b) Han did not shoot first. Are fans happy? No
p is true — q must be true

c) Fans are unhappy. Did Han shoot first? Maybe
q is true

d) Fans are happy. Did Han shoot first? Yes
q is false

write out all terms for

$$\begin{cases} a_3 = 5 \\ a_n = 2 + a_{n-1}^2 & \text{for } 4 \le n \le 5 \end{cases}$$

Also, state whether this formula is general or recursive.

$a_3 = 5$

$a_4 = 2 + 5^2 = 27$

$a_5 = 2 + 27^2 = 731$

5, 27, 731