

# Review:

Wednesday, December 03, 2014  
9:53 AM

Evaluate the following sum:

$$-3 + 1 - \frac{1}{3} + \frac{1}{9} - \dots$$

geometric:  $r = -\frac{1}{3}$

$$|r| < 1? \quad \text{or} \quad -1 < r < 1?$$

yes!

$$S_{\infty} = \frac{a_1}{1-r} = \frac{-3}{1-(-\frac{1}{3})} = \frac{-3}{\frac{4}{3}} = -3 \cdot \frac{3}{4} = -\frac{9}{4}$$

$$\frac{1}{9} - \frac{1}{3} + 1 - 3 + \dots$$

geometric:  $r = -3$

$$|r| < 1? \quad \text{or} \quad -1 < r < 1?$$

no!

$\therefore$  DNE

true: If Han did not shoot first, fans are unhappy.

a) Han shot first. Are fans happy? maybe

- b) Hen did not shoot first. Are fans happy? No  
 c) Fans are unhappy. Did Hen shoot first? Maybe  
 d) Fans are happy. Did Hen shoot first? Yes

can't have: first one true, second one false

$$p \rightarrow q \quad \text{if } p \text{ true, } q \text{ true}$$

$$\bar{q} \rightarrow \bar{p} \quad \text{if } \bar{q} \text{ true, } \bar{p} \text{ true}$$

use the laws of logic to simplify:

$$\overline{p \wedge q} \wedge (\bar{p} \vee \bar{q})$$

For  $A = \{0, 1, 2\}$ ,  $B = \{1, 2, 3\}$ , and  $U = \{0, 1, 2, \dots\}$ ,  
 answer T or F:

a)  $\bar{A} = \{3, 4, 5, \dots\}$  T

b)  $A \subseteq N$  F

c)  $\emptyset \subset A$  T

d)  $2 \subseteq U$  F

↑  
not a set