

Review for Final

Wednesday, October 16, 2019 11:36 AM

convert 24362 to hexadecimal

	Q	R
$24362 \div 16$	1522	10 = A
$1522 \div 16$	95	2
$95 \div 16$	5	15 = F
$5 \div 16$	0	5

assume inclusive unless you have reason to believe it's XOR

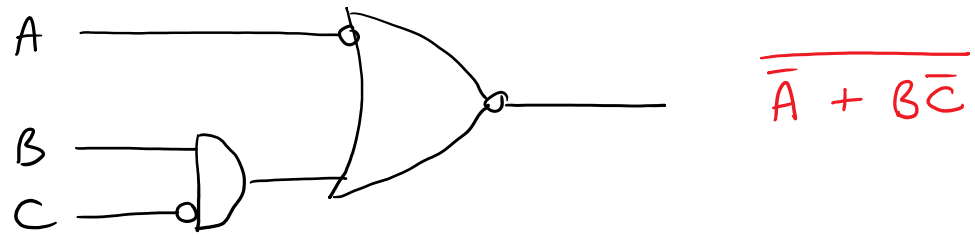
answer: SF2A16

I like Sprite	or	7-Up.	Do I like Sprite?	Maybe
I like Sprite	and	7-Up.	Do I like Sprite?	Yes
I like Sprite	and	7-Up.	Do I like Sprite or 7-up?	Yes
I like Sprite	or	7-Up.	Do I like Sprite and 7-Up?	Maybe

For the following pairs of sentences below, is the second sentence the negation of the first?

- There are no keys on my keyring. I have a positive number of keys on my keyring. Yes
- There are at least 3 dogs in the park. There are at most 3 dogs in the park. No
- All textbooks are overpriced. No textbooks are overpriced. No

write the Boolean expression that corresponds to the following gate diagram.



For the following sequences, state whether they are arithmetic, geometric, or neither. Also, give a formula for a_n .

a) 80, -20, 5, ...

geometric with $r = \frac{-20}{80} = -\frac{1}{4}$

general form

$$a_n = a_m r^{n-m}$$

let $m=1$

$$a_n = 80 \left(-\frac{1}{4}\right)^{n-1}$$

recursive

$$\begin{cases} a_1 = 80 \\ a_n = -\frac{1}{4} a_{n-1} \quad \text{for } n \geq 2 \end{cases}$$

b) ① 1, ② 8, ③ 27, ④ 64, ...

neither

$$a_n = n^3 \quad \text{for } n \geq 1$$

evaluate

$$\sum_{j=5}^{100} (3-4j) = \overset{\textcircled{5}}{-17} + \overset{\textcircled{6}}{(-21)} + \overset{\textcircled{7}}{(-25)} + \dots + \overset{\textcircled{100}}{-397}$$

arithmetic with $d = -4$

$$\begin{aligned} S_k &= \frac{k}{2} (a_m + a_n) \\ &= \frac{96}{2} (-17 - 397) \\ &= -19872 \end{aligned}$$

$$\begin{aligned} k &= n - m + 1 \\ &= 100 - 5 + 1 = 96 \end{aligned}$$

$$S_k = \frac{k}{2} (2a_m + (n-m)d)$$