

These are only answers, not solutions. As a result, when a proof or explanation is asked for, we have put “N/A”

1. a.  $1 - (1/2)^k$   
b.  $n - n/(2^k)$   
c. N/A

2. subgraph - W  
O(f) - Tr  
o(f) - S  
asymptotic - Tr

3. a. one node by itself and  $K_3$   
b. “Let  $u$  be a vertex that is adjacent to  $v$  in  $G_{n+1}$ ”  
c. Either the first or fourth statement.

4. a. N/A  
b.  $v = v_1 + v_2, e = e_1 + e_2, f = f_1 + f_2, c = c_1 + c_2$   
c. N/A

5. a. 120  
b. 8/15  
c. 144

6. N/A

7. a.  $2^i$   
b. N/A  
c. N/A

8. a.  $s_0 = 0, s_n = 4s_{n-1} + 1$   
b. N/A  
c.  $\frac{4^n - 1}{3}$

9. a. 1  
b.  $Pr[X_j = 1 | X_i = 1] = \frac{1}{n-1}$   
c. N/A  
d. N/A  
e. 1  
f. N/A

10. 1. F

2. T  
3. T  
4. F  
5. F  
6. T  
7. T  
8. F

11. N/A

12. a. (2.)  
b. (1.)  
c. (8.)  
d. (7.)

- 2
- e. (1.)
  - f. (8.)
  - g. (6.)
  - h. (1.)

13. N/A

14. This was a previous miniquiz problem whose solution is available online.

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