

## Quiz Questions: Relations, Sequences, Summations

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- Which of these are posets?  
A.  $(R, =)$   
B.  $(R, <)$   
C.  $(R, \neq)$   
D.  $(R, |)$
- Let a set  $S = \{2, 4, 8, 16, 32\}$  and  $\leq$  be the partial order defined by  $S \leq R$  if  $a$  divides  $b$ . Number of edges in the Hasse diagram of is:  
A. 6  
B. 5  
C. 9  
D. 4
- Determine the number of different equivalence relations for the set  $\{2, 4, 5\}$ .  
A. 5  
B. 7  
C. 8  
D. 125
- How many elements are there in the smallest equivalence relation on a set with 8 elements?  
A. 64  
B. 8  
C. 48  
D. 32
- The value of  $\sum_{i=1}^3 \sum_{h=0}^2 i$  is:  
A. 10  
B. 17  
C. 15  
D. 18
- Which of the following sequences will have a difference 3 among subsequent elements, where  $n$  is an Integer?  
A.  $a_n = 2n^2 + 3n$   
B.  $a_n = 2n^2 + 3$   
C.  $a_n = 3n^2 + 3n$   
D.  $a_n = 5 + 3n$
- For the given geometric progression find the first fractional term:  $2^{50}, 2^{47}, 2^{44}, \dots$   
A.  $2^{-1}$   
B.  $2^{-2}$   
C.  $2^{-3}$   
D. None of the mentioned

8. For the sequence 1, 7, 25, 79, 241, 727 ... a function  $f : \mathbf{Z}^+ \rightarrow S$  for defining  $a_n$  is:
- A.  $3^{n+1} - 2$
  - B.  $3^n - 2$
  - C.  $(-3)^n + 4$
  - D.  $(n + 1)^2 - 3$