Quiz Questions: Relations, Sequences, Summations

1) Which of these are posets?
   a) (R,=)
   b) (R, <)
   c) (R,≠)
   d) (R, ł)

2) Let a set S = {2, 4, 8, 16, 32} and <= be the partial order defined by S <= R if a divides b. Number of edges in the Hasse diagram of is:
   a) 6
   b) 5
   c) 9
   d) 4

3) Determine the number of different equivalence relations for the set {2, 4, 5}.
   a) 5
   b) 7
   c) 8
   d) 125

4) How many elements are there in the smallest equivalence relation on a set with 8 elements?
   a) 64
   b) 8
   c) 48
   d) 32

5) The value of $\sum_{i=1}^{3}\sum_{h=0}^{2} i$ is:
   a) 10
   b) 17
   c) 15
   d) 18

6) 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) $a_n = 5 + 3n$

7) For the given geometric progression find the first fractional term:$2^{50}, 2^{47}, 2^{44}, \ldots$

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) $(n+1)^{2} - 3$