Name: Date:

1. $\boxed{\text{C}}$

2. $\boxed{\text{E}}$

3. The first 2 conditions mean that the numbers must look like $4bc0, 4bc5, 5bc0, 5bc5$, 4 different numbers. So now we need to figure out how many pairs (b, c) we can have. There are 6 different pairs, $(3,4),(3,5),(3,6),(4,5),(4,6),(5,6)$ and for each of those 6 pairs, there are 4 different possible numbers. This gives us a total of $6 \times 4 = 24$ numbers. $\boxed{\text{C}}$

4. $\boxed{\text{E}}$

5. $\boxed{\text{C}}$

6. If the cube x is written in its prime factorization, it will look like $x = p_1^{3b_1} p_2^{3b_2} \cdots p_n^{3b_n}$ and so will have $(3b_1+1)(3b_2+1)\cdots(3b_n+1) = 3k+1$ for some integer k since each term of the expansion will be a multiple of 3 except for the last term which is just $1^n = 1$. In any case, we now need only find one of the answers that meets this criterion.

   The answer is $\boxed{\text{C}}$ since $202 = 3(67)+1$.

7. If the bug starts on point 5, it will move to point 1. It will then move to point 2, then point 4, and back to point 1. We have a repeating pattern of $1 \to 2 \to 4$.

   We just divide 1995 by 3 to use the remainder to find what point the bug finishes on. $1995 \div 3 = 665$ with no remainder so it finishes on point 4. $\boxed{\text{D}}$

8. $\boxed{\text{A}}$

9. $\boxed{\text{E}}$

10. $\boxed{\text{E}}$