**20Q part D**

*based on Yes and No by Natasha Rozhkovskaya*

D1. I have a few marbles in my pocket (at least one and no more than eight). I can answer questions only “yes” or “no.” Can you guess the number of marbles in my pocket by asking only three questions?

D2. Instead of marbles, suppose that I asked the world’s only *average* two year-old to think of any word. I would ask YNQs to guess the word. This average two year-old only knows 25 words. How many questions would I have to ask to correctly determine the word?

D3. Repeat the question above for the average:

 First-grader: 1000 words

 Adult: 6000 words

 English professor: 15,000 words

 Shakespeare: 60,000

 English Language: 250,000 words

D4. The game 20Q should then be able to distinguish between how many objects using only YNQs?