Problem discussed in the videos:

Part A: not discussed

Part B: How many quantum states are possible for n=2?

Part C: Which of the following is not a valid electron structure for an atom in its ground state?
(A) $1s^2 2s^2 2p^6 3s^3$
(B) $1s^2 2s^2 2p^6 3s^2 3p^4$
(C) $1s^2 2s^2 2p^6 3s^2$
(D) $1s^2 2s^2 2p^6 3s^2 3p^5$
(E) $1s^2 2s^2 2p^5$

Part D
Which of the following are valid ground-state electron structures?
1. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^2$
2. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{11}$
3. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$