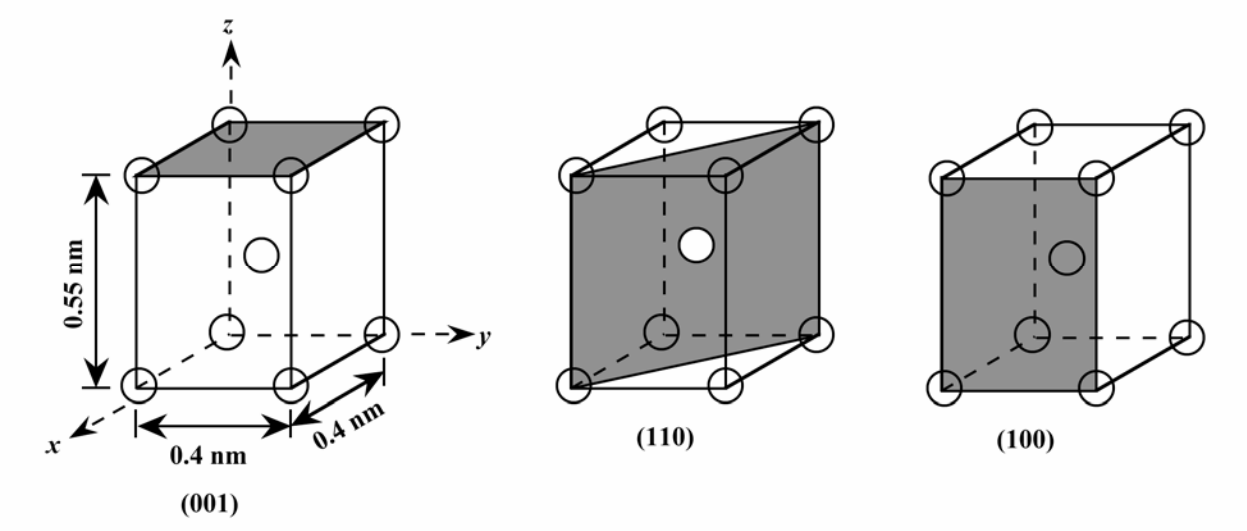
3.46 Unit cells are constructed below from the three crystallographic planes provided in the problem statement.



(a) This unit cell belongs to the tetragonal system since $a = b = 0.40$ nm, $c = 0.55$ nm, and $\alpha = \beta = \gamma = 90°$.

(b) This crystal structure would be called body-centered tetragonal since the unit cell has tetragonal symmetry, and an atom is located at each of the corners, as well as the cell center.