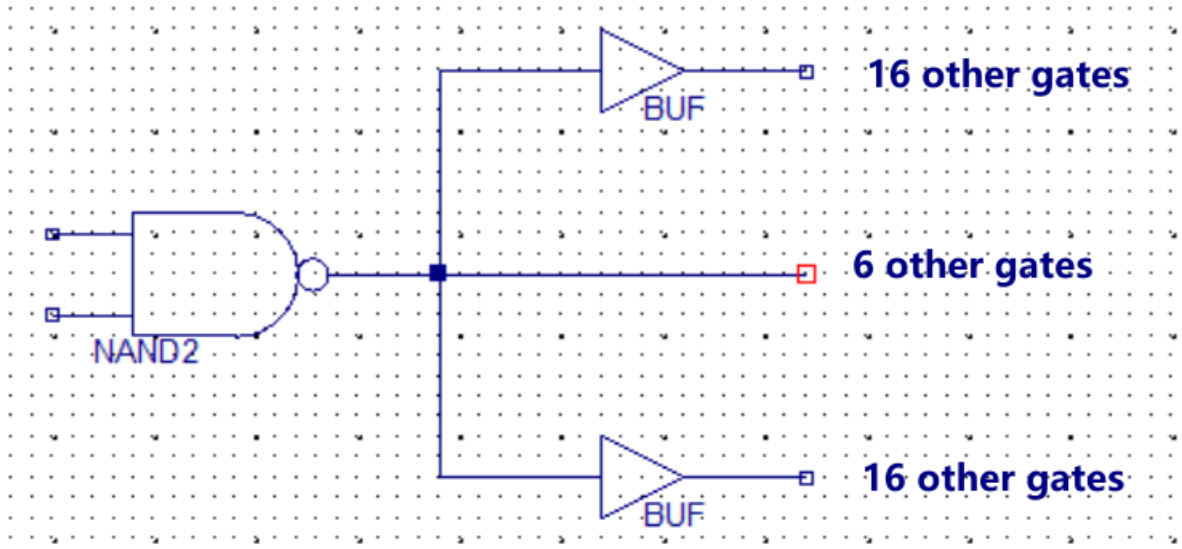
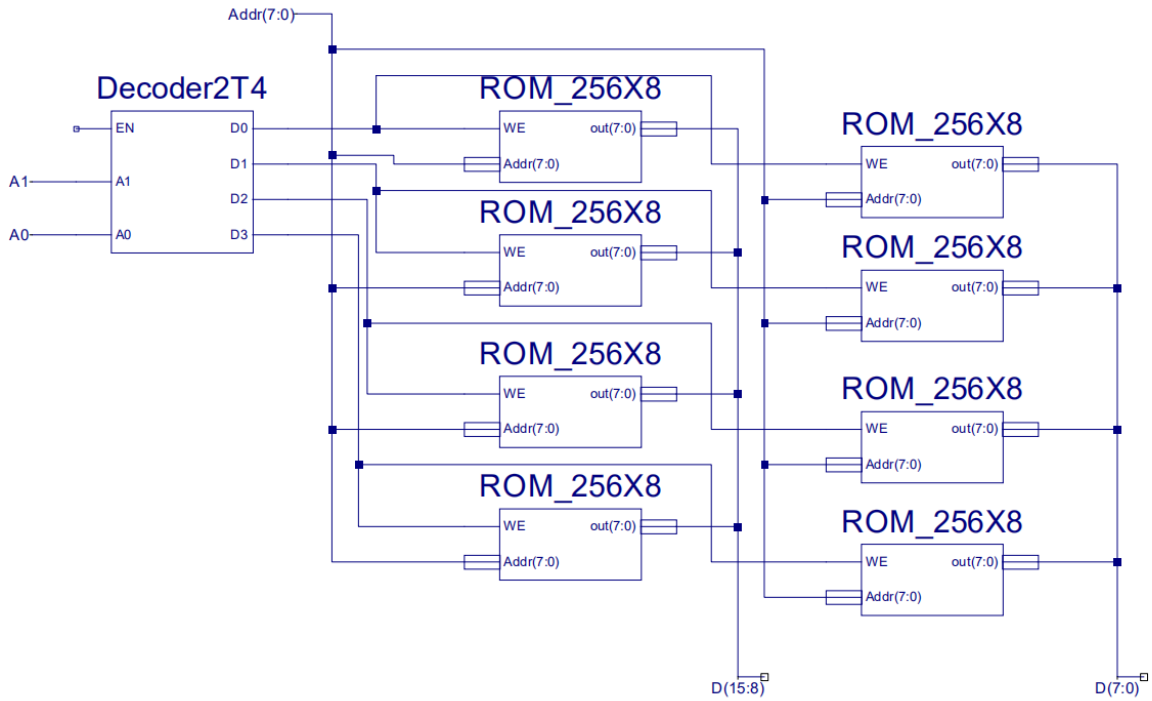
# 5-3




# 5-4

**(a)**




**(b)**

$$\frac{4096}{256} \times \frac{32}{8} = 64$$

So 64 chips are needed.

## 5-12

$$A = X\overline{Z} + Y\overline{Z} + \overline{X}\overline{Y}Z$$

$$B = XY + \overline{X}\overline{Y} + \overline{X}Z$$

$$C = A + XY$$

$$D = \overline{X}Y + Z$$