

### Answer on Question #49672, Chemistry, Other

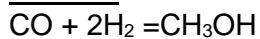
**Task:**

Suppose that the molar concentrations for CO and H<sub>2</sub> at equilibrium are [CO] = 0.05 M and [H<sub>2</sub>] = 0.06 M.

Use the formula you found in Part B to calculate the concentration of CH<sub>3</sub>OH.

Formula from part B:  $K_c[\text{CO}][\text{H}_2]^2$

**Answer:**



$$K_c = \frac{[\text{CH}_3\text{OH}]}{[\text{CO}][\text{H}_2]^2}$$

$$[\text{CH}_3\text{OH}] = K_c \times [\text{CO}][\text{H}_2]^2$$

The equilibrium constant for the given reaction is  $K_c = 2.3 \times 10^4$ .

$$[\text{CH}_3\text{OH}] = 2.3 \times 10^4 \times 0.05 \times 0.06^2 = 4.14 \text{ M}$$