Answer on Question #71681, Chemistry / General Chemistry

Question:

What is the value of K_c for the reaction below if at equilibrium $[CH_4] = 0.20$ M, $[H_20] = 0.20$ M, [CO] = 0.50 M and $[H_2] = 1.50$ M?

$$CH_4(g) + H_2O(g) <--> CO(g) + 3H_2(g)$$

Solution:

For this reaction:

$$K_c = \frac{[H_2]^3[CO]}{[CH_4][H_2O]} = \frac{1.50^3 \times 0.50}{0.20 \times 0.20} = 42.1875$$

Answer:

$$K_c = 42.1875$$

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