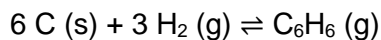


Name _____

Use the following chemical equilibrium to answer all questions.



- Write out the K_c expression. $K_c = \frac{[\text{C}_6\text{H}_6]}{[\text{H}_2]^3}$
- As we've discussed in class, K_p can be calculated from K_c according to $K_p = K_c(RT)^{\Delta n_{\text{gas}}}$. What is Δn_{gas} for this reaction? $1-3 = -2$ (products – reactants)
- Predict the way in which the equilibrium will shift in response to each of the following changes (products formed, reactants formed, or no change)

Adding C (s) to the flask

Adding C_6H_6 to the flask.

Solids don't influence the equilibrium – no change

Adding product – so need to make reactants

- K_c for this reaction is 12.82 M^{-2} . If 12 grams of carbon is combined with 0.25 M H_2 (g) and 3 M C_6H_6 (g):
 - Which way would the reaction shift? $Q = \frac{3}{0.25^3} = 192$ $Q > K$, so need to make more reactants.
 - Set up an ICE table. You do not need to do any algebra, but make sure you set up the table correctly.

	C (s)	3 H₂	C₆H₆
I	Solid – doesn't matter	0.25 M	3 M
C		+3x (shifts to make reactants!)	-x
E		0.25 + 3x	3 - x