Questão 1

$$\mathrm{NH_4CO_2NH_2\,(s)} \longleftrightarrow 2\,\mathrm{NH_3\,(g)} + \mathrm{CO_2\,(g)}$$

(i)

$$P_{eq\,\mathrm{NH_3\,(g)}} = P_{eq\,Total} * \frac{2}{3}\,\mathrm{bar} \cong 1.2655\,\mathrm{bar}$$

(ii)

$$P_{eq\,\mathrm{CO_2\,(g)}} = P_{eq\,Total} * \frac{1}{3}\,\mathrm{bar} \cong 0.6328\,\mathrm{bar}$$

(iii)

$$K_p = \frac{P_{eq\,NH3}^2\,P_{eq\,CO2}}{1} \cong 1.2655^2 * 0.6328 \cong 1.0134$$

(iv)

	P_i/bar	P_{Eq}/bar
$NH_3\,(g)$	0.00	1.2655
$CO_2\,(g)$	0.00	0.6328
Total	-	1.8983
		$K_p = 1.0134$

(v)

$$\boldsymbol{x}\,\mathrm{mol}_{NH_4CO_2NH_2\,(s)} : \boldsymbol{vol_{eq}} = \mathbf{3.00}\,\mathrm{dm}^3$$

$$x\,\mathrm{mol}_{NH_4CO_2NH_2\,(s)} \cong \frac{1.0134\,\mathrm{mol}_{NH_4CO_2NH_2\,(s)}}{\mathrm{mol}_{NH_4CO_2NH_2\,(s)\mathrm{Decomp.}}} \frac{\mathrm{mol}_{NH_4CO_2NH_2\,(s)\mathrm{Decomp.}}}{\mathrm{mol}_{CO_2\,(g)}}$$

$$\frac{8.3145 * (50 + 273.15)\,\mathrm{mol}_{CO2\,(g)}}{0.6328 * 10^5 * (3.00\,\mathrm{d}^3)} \cong 14.3439\,\mathrm{mol}_{NH_4CO_2NH_2\,(s)}$$