

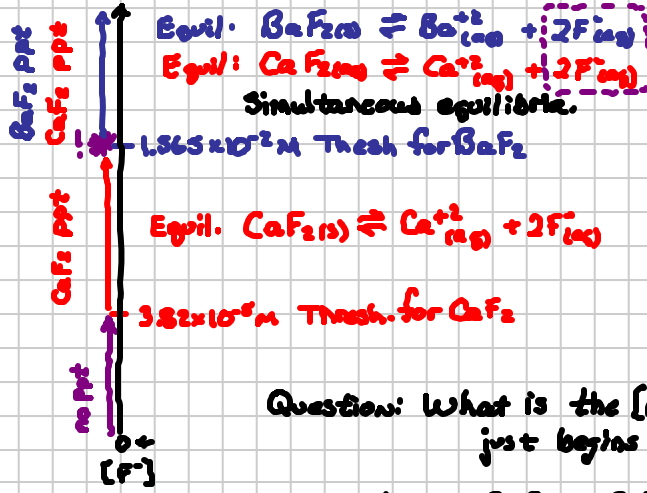
# Lecture 16.5: Multiple Precipitates

Note Title

10\30\5041

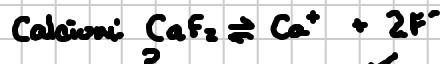


0.100 M Ba<sup>2+</sup>  
0.100 M Ca<sup>2+</sup>



- Thresholds:
- BaF<sub>2</sub>: [F<sup>-</sup>] = 1.565 × 10<sup>-7</sup> M
  - CaF<sub>2</sub>: [F<sup>-</sup>] = 3.82 × 10<sup>-5</sup> M

Question: What is the [Ca<sup>2+</sup>] when the BaF<sub>2</sub> just begins to ppt out? \*



$$[Ca^{2+}][F^{-}]^2 = K_{sp}$$

\* 1.565 × 10<sup>-7</sup> M

$$[Ca^{2+}](1.565 \times 10^{-7})^2 = 1.46 \times 10^{-10}$$

$$[Ca^{2+}] = 5.96 \times 10^{-7} M$$

$$\Delta\% = \frac{[Ca^{2+}]_f - [Ca^{2+}]_i}{[Ca^{2+}]_i} \cdot 100$$

$$\Delta\% = \frac{(5.96 \times 10^{-7}) - (0.100)}{(0.100)} \cdot 100 = -99.9994\%$$