Experiment 26 ASA

2. (a) $\frac{0.012 mol}{L} \times 0.0050 L = 6.0 \times 10^{-5} mol\ Pb^{2+}$

(b) $\frac{0.030 mol}{L} \times 0.0050 L = 1.5 \times 10^{-4} mol\ I^-$

(c) $\frac{7 \times 10^{-3} mol}{L} \times 0.010 L = 7 \times 10^{-5} mol\ I^-$

↑ total volume = 5.0 + 5.0 mL

(d) $(1.5 \times 10^{-4}) - (7 \times 10^{-5}) = 8 \times 10^{-5} mol\ I^-$ in ppt

(e) $\frac{8 \times 10^{-5}}{2} = 4 \times 10^{-5} mol\ Pb^{2+}$ in ppt

(f) $(6.0 \times 10^{-5}) - (4 \times 10^{-5}) = 2 \times 10^{-5} mol\ Pb^{2+}$ in solution

(g) $\frac{2 \times 10^{-5} mol\ Pb^{2+}}{0.010 L} = 2 \times 10^{-3} M\ Pb^{2+}$

(h) $K_{sp} = [Pb^{2+}][I^-]^2 = (2 \times 10^{-3} M)(7 \times 10^{-3} M)^2 = 1 \times 10^{-7} \frac{mol^3}{L^3}$

3. (a) $[Pb^{2+}] = \frac{[I^-]}{2}$

(b) $[Pb^{2+}] = \frac{5.0 \times 10^{-3} M}{2} = 2.5 \times 10^{-3} M$

(c) $K_{sp} = [Pb^{2+}][I^-]^2 = (2.5 \times 10^{-3} M)(5.0 \times 10^{-3})^2$

$= 6.3 \times 10^{-8} \frac{mol^3}{L^3}$