AP Unit 1 - Stoic Quiz

$$Pb(NO_3)_{2(s)} + 2NaI_{(aq)} \rightarrow PbI_{2(s)} + 2NaNO_{3(aq)}$$

↓ yellow

.150 g — .100 M — ?

125 ml → .125 L

$$\left(\frac{.100 \text{ moles NaI}}{1 L}\right)\left(\frac{.125 L}{1}\right) = \boxed{.0125 \text{ moles NaI}}$$

$$\left(\frac{.150 g\ Pb(NO_3)_2}{1}\right)\left(\frac{1 \text{ mole } Pb(NO_3)_2}{331.2 g\ Pb(NO_3)_2}\right) = \boxed{4.53 \times 10^{-4} \text{ moles } Pb(NO_3)_2}$$

	$Pb(NO_3)_2$	$2NaI$	$\rightarrow PbI_2$	
R				
I	4.53×10^{-4} m	.0125 m	0	
C	$-x$	$-2x$	x	$x = 4.53 \times 10^{-4}$ ✓ or $x = \frac{.0125}{2} = .00625$
	-4.53×10^{-4}	-9.06×10^{-4}	4.53×10^{-4}	
	0	.0116 Excess	4.53×10^{-4}	

$\boxed{\therefore \text{ Limiting } Pb(NO_3)_2}$

$\boxed{4.53 \times 10^{-4} \text{ moles } PbI_2 \text{ produced}}$