

98. The (ideal) driving time before the change was $t = \Delta x/v$, and after the change it is $t' = \Delta x/v'$. The time saved by the change is therefore

$$t - t' = \Delta x \left(\frac{1}{v} - \frac{1}{v'} \right) = \Delta x \left(\frac{1}{55} - \frac{1}{65} \right) = \Delta x(0.0028 \text{ h/mi})$$

which becomes, converting $\Delta x = 700/1.61 = 435$ mi (using a conversion found on the inside front cover of the textbook), $t - t' = (435)(0.0028) = 1.2$ h. This is equivalent to 1 h and 13 min.