Fall 2007 Homework #5

due: 10 a.m. Mon. Oct 8th

1. (10 points) Deduce the structures of **A** and **B**.

	$\mathbf{A} \qquad \xrightarrow{\text{LiAlH}_4} \qquad \mathbf{B}$	$C_6H_{14}O$	$C_6H_{14}O$	
	$\begin{array}{ccc} \mathbf{A} & \xrightarrow{} & \mathbf{B} \\ \mathbf{C}_7 \mathbf{H}_{14} \mathbf{O}_2 & & & & & & & & & & & & & & & & & & &$	¹³ C NMR: 29.7, t	¹ H NMR: 0.91, s, 9H	
A:	O or O H	29.8, q (3) 46.4, s 60.0, t	1.53, t, J = 7.3 Hz, 2H 2.13, bs, 1H (exchanges) 3.70, t, J = 7.3 Hz, 2H	
B:	Ő	,		

2. (10 points each) Draw an arrow-pushing mechanism for the following transformation. What is the structure of **D**?

$$\begin{array}{c} CH_{3} \\ CH_{3} \\ CH_{3} \\ CH_{3} \\ CH_{2} \\ CH_{3} \\ CH_{2} \\ CH_{3} \\ CH_{4} \\ CH_{5} \\ CH_{5$$

3. (10 points) Outline a synthesis of **E**. You may use any material that contributes three or fewer carbons to the final product.