1) "If Tom wins the state lottery, then he will be rich."
Which of the following is the contrapositive of the statement?

a) If Tom wins the state lottery, then he will be rich.
b) If Tom does not win the state lottery, then he will not be rich.
c) Not enough information given to write the contrapositive.
d) If Tom is not rich, then he did not win the state lottery.
e) If Tom is rich, then he won the state lottery.

2) Describe the auxiliary line (segment) as determined, overdetermined, or underdetermined.

With M the midpoint of AB, draw CM, perpendicular to AB.

a) Underdetermined
b) Determined
c) Overdetermined
d) None of the above
3) Given \( \triangle ABC \) with \( B-D-E-C \), \( m \angle 3 = m \angle 4 = 10^\circ \), and \( m \angle 1 = m \angle 2 = 70^\circ \), find \( m \angle B \).

\[
\begin{align*}
\angle DAE &= 40^\circ \\
\angle 1 &= 70^\circ \\
\angle 2 &= 70^\circ \\
\angle 3 &= 10^\circ \\
\angle 4 &= 10^\circ \\
\end{align*}
\]

\[ a) 50^\circ \quad b) 10^\circ \quad c) 60^\circ \quad d) 100^\circ \quad e) 170^\circ \]