7. Given \( \triangle ABC \) with \( DE \parallel BC \). Find \( AE \) if \( AD = 6 \), \( DB = 4 \) and \( AC = 15 \).

\[
\frac{AD}{DB} = \frac{AE}{EC} \\
\frac{6}{4} = \frac{x}{15-x} \\
6(15-x) = 4x \\
90 - 6x = 4x \\
90 = 10x \\
9 = x \quad \Rightarrow \quad AE = 9
\]

8. In \( \triangle ABC \), \( CD \) bisects \( \angle ACB \). \( AC = 6 \), \( CB = 8 \) and \( AB = 7 \). Find \( AD \).

\[
\frac{AC}{CB} = \frac{AD}{DB} \quad \text{Let} \quad x = AD \\
\frac{6}{8} = \frac{x}{7-x} \\
6(7-x) = 8x \\
42 - 6x = 8x \\
42 = 14x \\
3 = x \quad \Rightarrow \quad \text{so} \ AD = 3
\]

9. Each side of a rhombus measures 12 inches. If one diagonal of the rhombus is 10 inches, what is the exact length of the other diagonal?

Diagonals are \( \perp \) in rhombus.
Diagonals bisect each other.

Use Pythagorean Theorem.

To find \( a \):
\[ 6^2 + a^2 = 10^2 \]
\[ 36 + a^2 = 100 \]
\[ a^2 = 64 \]
\[ a = 8 \quad \Rightarrow \quad \text{diagonal} = 2a = 16. \]