

Lines in a Triangle

Short-answer questions about lines in a triangle.

Adjust the figures to fit the given conditions within **eyeball accuracy**. Enter the requested measurements.

Problem 1 Geogebra link: <https://tube.geogebra.org/m/q32gyaud>

In $\triangle ABC$ above, move point D to make the following measurements. **Enter -1 if it is not possible.**

- (a) When \overline{BD} is a median, $AD = \boxed{2.25}$.

Hint: A median is drawn from a vertex to the midpoint of the opposite side.

- (b) When \overline{BD} is a angle bisector, $AD = \boxed{2.78}$.

Hint: An angle bisector cuts an angle in half. Focus near the vertex of the angle rather than near D .

- (c) When \overline{BD} is a perpendicular bisector, $AD = \boxed{-1}$.

Hint: An perpendicular bisector cuts an segment in half and is perpendicular to it. **Enter -1 if it is not possible.**

- (d) When \overline{BD} is a altitude, $AD = \boxed{6.46}$.

Hint: An altitude contains a vertex and is perpendicular to the line containing the opposite side. **Enter -1 if it is not possible.**