

# Lines in a Triangle

Short-answer questions about lines in a triangle.

Adjust the figures to fit the given conditions within **eyeball accuracy**. Then 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.**