

Polygon Measurement

Short-answer questions involving length, angle, and area.

Careful Measurement with Eyeballs

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

Geogebra link: <https://tube.geogebra.org/m/gjf28er6>

Problem 1 In figure above, when point C is adjusted so that BC is perpendicular to AC , $AC = \boxed{2.09}$.

Hint: When two lines are perpendicular, they cross to create four congruent angles.

Hint: Use the corner of a piece of paper.

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

Problem 2 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.**

Learning outcomes:
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(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.**

Geogebra link: <https://tube.geogebra.org/m/a888zyw2>

Problem 3 In $\triangle ABC$ above, the height to base \overline{AC} is $\boxed{3.585}$.

Hint: You may move point D . A height is the length of an altitude, which must be perpendicular to the line containing the chosen base.

Geogebra link: <https://tube.geogebra.org/m/hta9hbuf>

Problem 4 In $\triangle ABC$ above, the height to base \overline{AC} is $\boxed{3.511}$.

Hint: You may move point D . A height is the length of an altitude, which must be perpendicular to the line containing the chosen base.