Measuring by Sight

Short-answer questions involving measuring.

Careful Measurement by Sight

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

Problem **1** *Geogebra link:* $https://tube.geogebra.org/m/gjf28er6$

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

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

Hint: *Use the corner of a piece of paper.*

Problem **2** *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.**

Problem 3 *Geogebra link:* `https://tube.geogebra.org/m/a888zyw2`

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.*

Problem 4 *Geogebra link:* `https://tube.geogebra.org/m/kta9hbuf`

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.*