Parallelogram Properties

Refer to this applet: https://www.geogebra.org/m/tnh3BDSV

Vary the shape and size of the parallelogram shown. What seems to be true of its measurements? Write several conjectures.

Conjecture 1:

Conjecture 2:

Conjecture 3:

Conjecture 4:

Conjecture 5:

Proving Some Properties of Parallelograms

1. What seems to be true about the opposite sides of a parallelogram?

Prove your conjecture.

2. What seems to be true about the angles of a parallelogram?

Prove your conjecture.

Base Angles of an Isosceles Trapezoid

Given: ABCD is an isosceles trapezoid (AD = BC)

Segment \overline{AE} was added parallel to \overline{BC} .

a. What postulate justifies this specification for \overline{AE} ?



- b. What kind of shape is ABCE?
- c. Prove that $\langle ADE \rangle \cong \langle BCE \rangle$.

This theorem is often stated "Base angles of an isosceles trapezoid are congruent." When proved it can be added to your Theorem List.