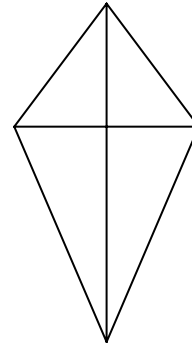


ACTIVITY: DEFINING A KITE

1. Balki knows the following properties of the kites:

- (a) two pairs of equal adjacent sides
- (b) perpendicular diagonals
- (c) one diagonal bisects the other
- (d) one pair of opposite angles is bisected by a diagonal
- (e) one diagonal is a line of symmetry
- (f) one pair of equal opposite angles



Can you help Balki to write a definition for a kite?

2. Balki formulates the following definitions for a kite:

- (a) A kite is a quadrilateral with perpendicular diagonals.
- (b) A kite is a quadrilateral with two pairs of equal adjacent sides and one pair of opposite angles equal.
- (c) A kite is a quadrilateral with perpendicular diagonals with one being bisected by the other.

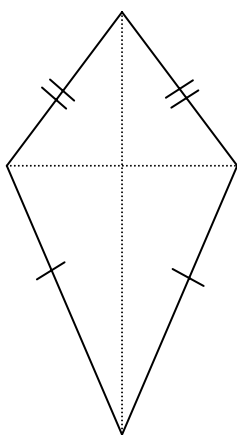
Accurately construct quadrilaterals that comply with each of these definitions.
Now analyse and discuss each definition given by Balki.

3. Balki is trying to find the *most economical* definition for a kite.

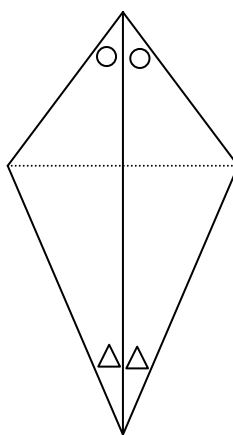
He comes up with the following definitions:

- (a) A kite is a quadrilateral with two pairs of adjacent sides equal
- (b) A kite is a quadrilateral with one pair of opposite angles bisected by a diagonal.
- (c) A kite is a quadrilateral with one diagonal the perpendicular bisector of the other.

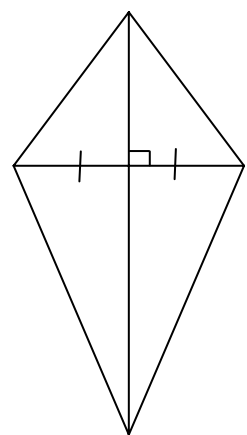
Use the diagrams below and the corresponding definition to deduce the other properties of the kite.



Definition (a)



Definition (b)



Definition (c)

Which definition is deductively the most economical? Discuss!
Do you prefer a different definition?