

Homework

13, 14, 15

NOT TWO COLUMN PROOF

p. 237: 7-11, 13-16, 20

7 In the isosceles trapezoid shown, $\overline{ST} \parallel \overline{RV}$.

Name: **a** The bases

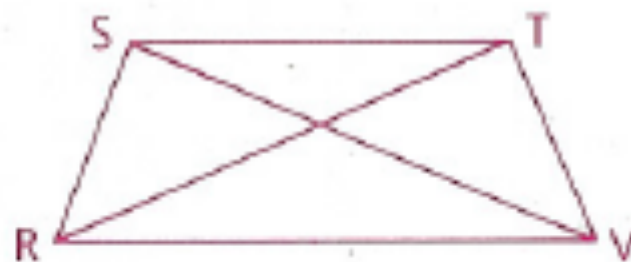
b The diagonals

c The legs

d The lower base angles

e The upper base angles

f All pairs of congruent alternate interior angles



8 Examine each statement below. If the statement is always true, write A; if sometimes true, write S; if never true, write N.

a A square is a rhombus.

b A rhombus is a square.

c A kite is a parallelogram.

d A rectangle is a polygon.

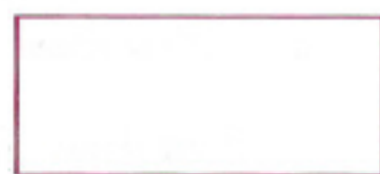
e A polygon has the same number of vertices as sides.

f A parallelogram has three diagonals.

g A trapezoid has three bases.

9 Why is a circle not a polygon?

- 10** Using the diagram, explain how the formula for the area of a parallelogram can be the same as that for the area of a rectangle.



- 11** If the sum of the measures of the angles of a triangle is 180, what is the sum of the measures of the angles in
- a** A quadrilateral?
 - b** A pentagon (five-sided polygon)?
- 13** Prove that in a parallelogram each pair of consecutive angles are supplementary.
- 14** Prove that in a parallelogram each pair of opposite sides are congruent.
- 15** Prove that the diagonals of a rectangle are congruent.

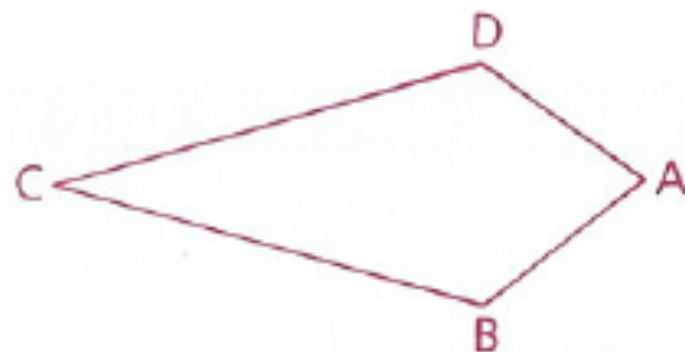
16 Given: ABCD is a kite.

$$AB = x + 3,$$

$$BC = x + 4,$$

$$CD = 2x - 1,$$

$$AD = 3x - y$$



- a** Solve for x and y .
- b** What is the perimeter of the kite?
- c** Is it possible for \overline{AC} to be 19 units long? Why or why not?

20 How many rectangles are shown in the figure at the right, in which all of the angles are right angles?

