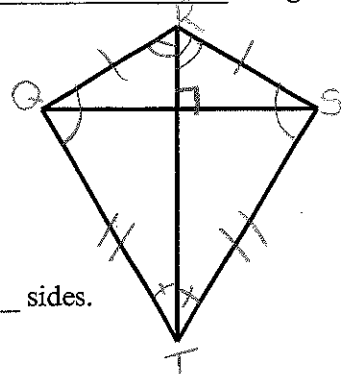


**Objectives:** Use properties of kites and trapezoids to solve problems.

**Kite:** a quadrilateral with two pairs of consecutive congruent sides.

- The diagonals of a kite are perpendicular & create 3 pairs of ≅ triangles.
- One pair of opposite angles of a kite are congruent.
- The other pair of opposite angles are bisected by the longer diagonal.

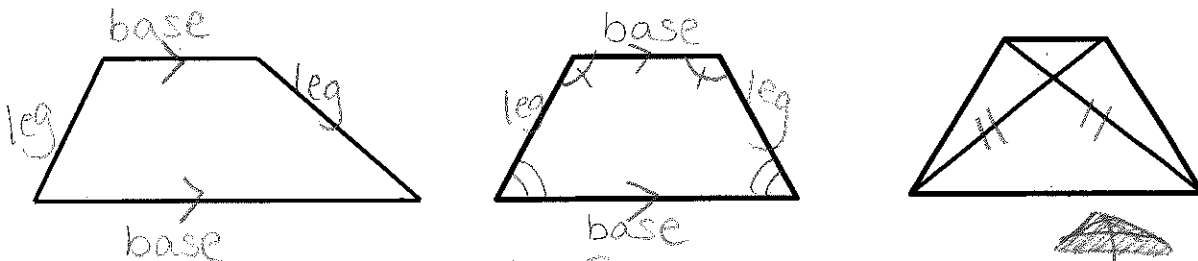


**EX 1:** Label the kite *QRST*. Mark the kite *QRST* with the characteristics from above.

**Trapezoid:** a quadrilateral with exactly one pair of parallel sides.

- Each pair of parallel sides in a trapezoid is called a base.
- The non-parallel sides in a trapezoid are called the legs.
- The base-angles of a trapezoid are the consecutive angles whose common side is a base.
- The angles whose common sides is a leg are supplementary (same-side interior angles).

**EX 2:** On the trapezoid on the left, mark the legs, bases, and base angles. Then mark the sides which are parallel.

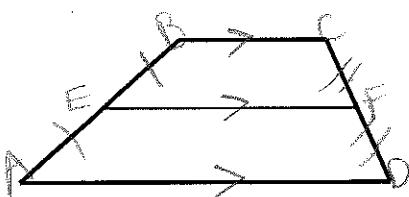


**Isosceles Trapezoid:** a trapezoid with congruent legs. Mark these on the middle trapezoid.

- Each pair of base angles are congruent. Mark these on the middle trapezoid.
- The diagonals are congruent.

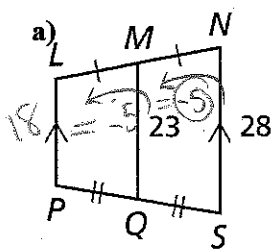
**Midsegment of a Trapezoid:** a segment joining the midpoints of the legs of a trapezoid.

- The midsegment of a trapezoid is parallel to the bases. Mark this on the trapezoid below.
- The length of a midsegment is  $\frac{1}{2}$  of the sum of the bases. Or, it is the average of the bases.

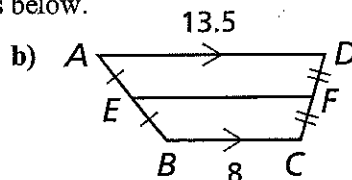


$$EF = \frac{1}{2} (AD + BC) \text{ mean}$$

**EX 3:** Find the lengths of the trapezoids below.



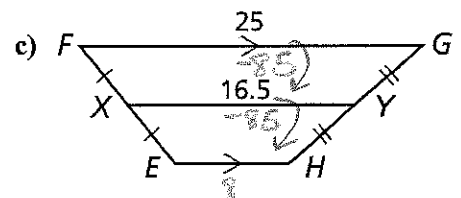
$LP = 18$



$$\frac{1}{2} (8 + 13.5)$$

$$\frac{1}{2} (21.5)$$

$$= 10.75 \quad EF = 10.75$$



$EH = 8$