**Geometry WS 2.10 – Kites**

Properties of a Kite

- Quadrilateral
- Two pairs of congruent sides (adjacent to each other – sharing a common vertex): $\overline{AD} \cong \overline{CD}$ and $\overline{AB} \cong \overline{CB}$
- Diagonals are perpendicular: $\overline{DB} \perp \overline{AC}$
- Opposite angles formed by **unequal sides** are congruent: $m\angle BAD \cong \angle BCD$
- Diagonal bisects the angles formed by the congruent sides: $\overline{DB}$ bisects $\angle ADC$ and $\angle ABC$
- Diagonal draw between the two pairs of congruent sides bisects the other diagonal: : $\overline{DB}$ bisects $\overline{AC}$
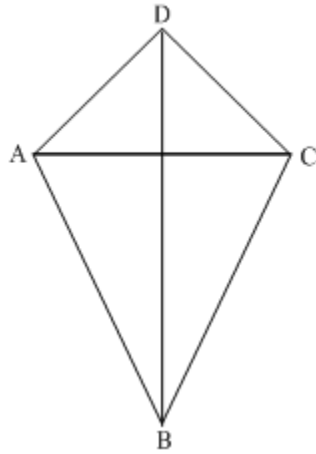
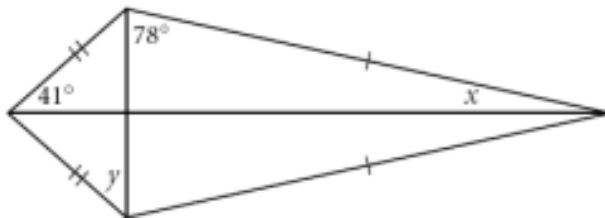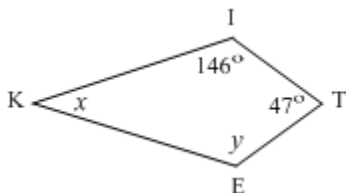Use the above diagram of kite *ABCD* to answer the questions below.

1. identify a perpendicular bisector in kite *ABCD*:_____

2. Identify an isosceles triangle in kite *ABCD*:_____

3. Identify a right tringle in kite *ABCD*:_____

Use the kite diagrams below, find the value of *x* and *y.*
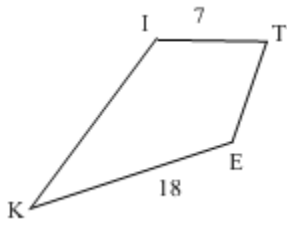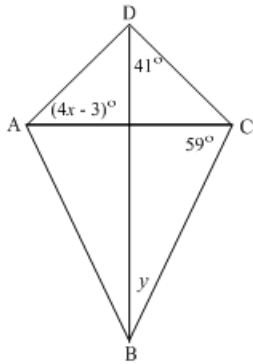
4.

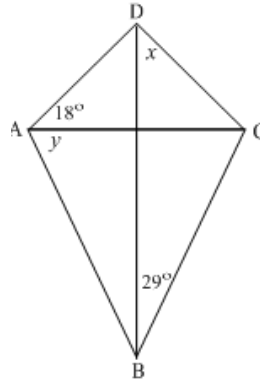
5.

6. Find the perimeter of kite KITE.

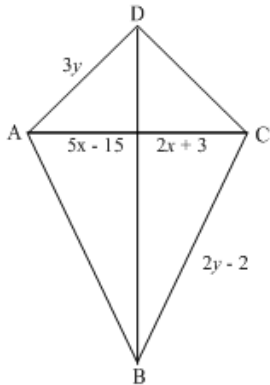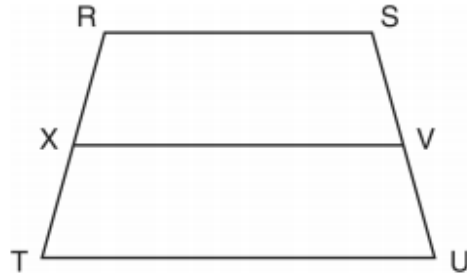Using the kites below, find *x* and *y*.

7.

8.

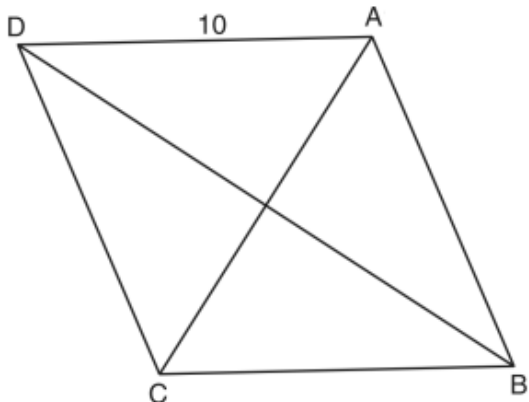9. If the perimeter of kite *ABCD* = 86 feet, find *x* and *y*.

10.

In the diagram below of trapezoid $RSUT$, $\overline{RS} \parallel \overline{TU}$, X is the midpoint of $\overline{RT}$, and V is the midpoint of $\overline{SU}$.

If $RS = 30$ and $XV = 44$, what is the length of $\overline{TU}$?

11.

In rhombus $ABCD$, with diagonals $\overline{AC}$ and $\overline{DB}$, $AD = 10$.

If the length of diagonal $\overline{AC}$ is 12, what is the length of $\overline{DB}$?