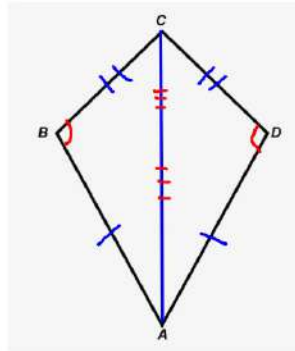


Kite - Quadrilateral with 2 pairs of consecutive sides congruent but opposite sides are not congruent.



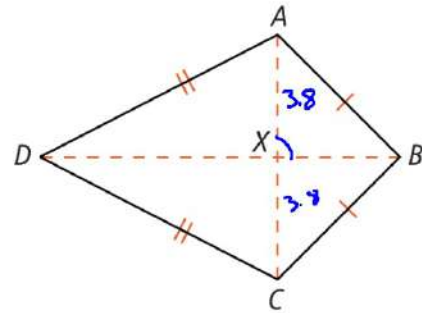
### Properties of a Kite

- Diagonals are perpendicular. Exactly one diagonal bisects the other.
- Exactly one pair of opposite angles are congruent

1. a. What is the measure of  $\angle AXB$ ?

90° Because in a kite Diagonals are  $\perp$

CHECK ANSWER



b. If  $AX = 3.8$ , what is  $AC$ ?

Enter 7.6 answer.

c. If  $BD = 10$ , does  $BX = 5$ ? Explain.

Enter your answer.

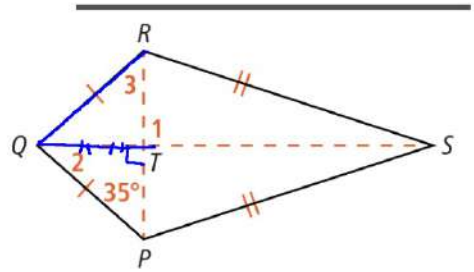
Quadrilateral  $PQRS$  is a kite with diagonals  $\overline{QS}$  and  $\overline{PR}$ .

A. What is  $m\angle 1$ ? =  $90^\circ$

**SOLUTION**

B. What is  $m\angle 2$ ? =  $55^\circ$

C. What is  $m\angle 3$ ? =  $35^\circ$



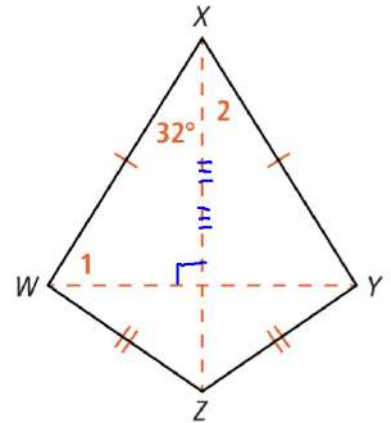
2. Quadrilateral  $WXYZ$  is a kite.

a. What is  $m\angle 1$ ?

Enter your ans:  $58^\circ$

CHECK ANSWER

b. What is  $m\angle 2$ ?  $= 32^\circ$

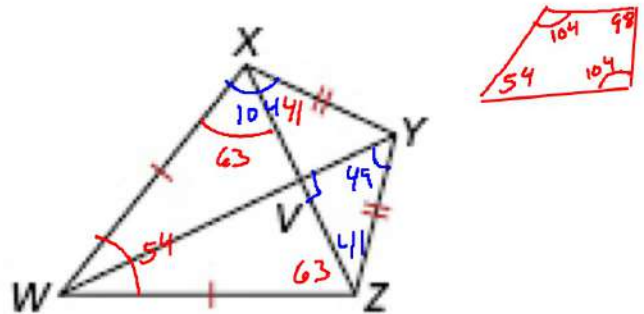


In kite WXYZ,  $m\angle WXY = 104^\circ$ , and  $m\angle VYZ = 49^\circ$ . Find each measure.

1.  $m\angle VZY = \underline{41^\circ}$

2.  $m\angle VXW = \underline{63^\circ}$

3.  $m\angle XWZ = \underline{54^\circ}$

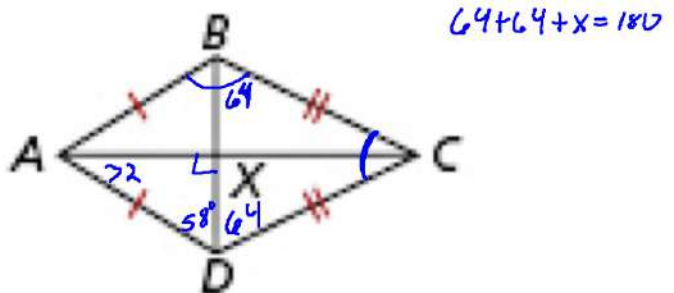


In kite ABCD,  $m\angle DAX = 32^\circ$ , and  $m\angle XDC = 64^\circ$ . Find each measure.

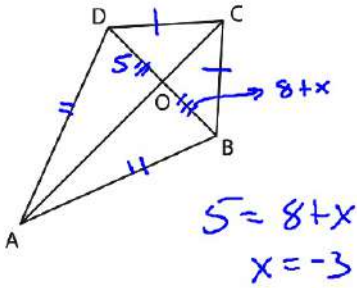
4.  $m\angle XDA = \underline{58^\circ}$

5.  $m\angle ABC = \underline{122^\circ}$

6.  $m\angle BCD = \underline{52^\circ}$

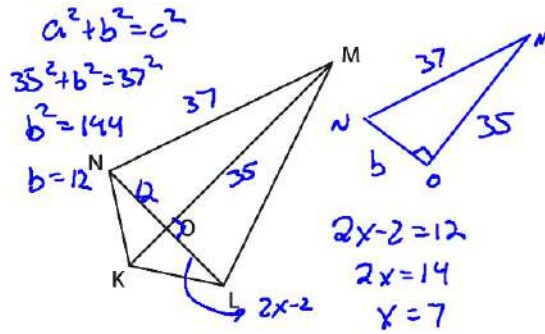


Find the value of x.



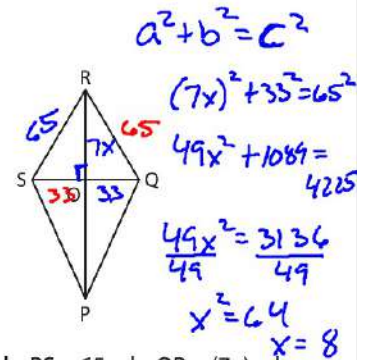
OB = (8 + x) in; OD = 5 in

x = -3



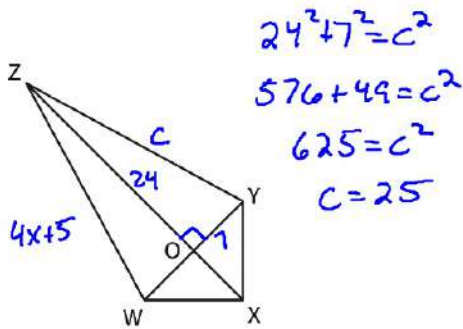
OL = (2x - 2) ft; OM = 35 ft; MN = 37 ft

x = 7



OQ = 33 yd; OS = 65 yd; OR = (7x) yd

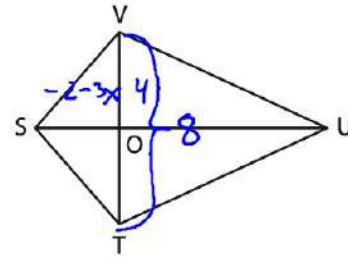
x = 8



OY = 7 in; WZ = (4x + 5) in; OZ = 24 in

x = 5

$WZ = ZY$   
 $4x + 5 = 25$   
 $4x = 20$   
 $x = 5$

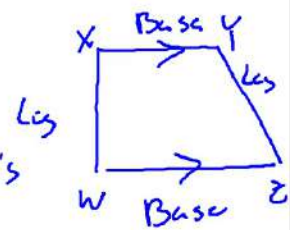
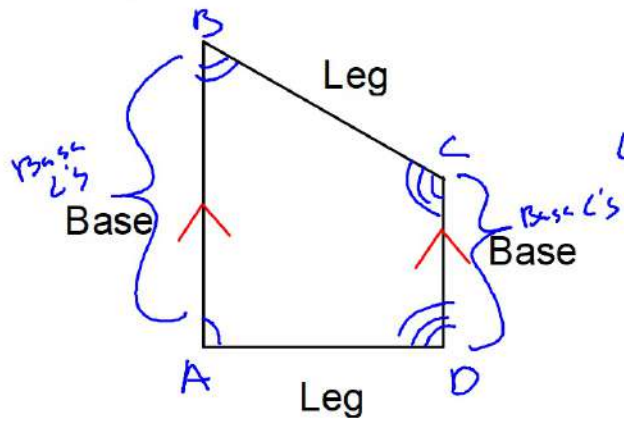
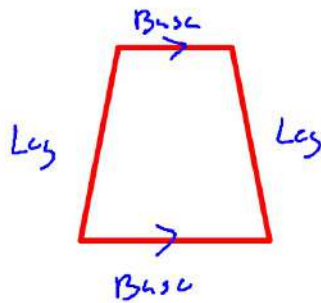


VT = 8 yd; OV = (-2 - 3x) yd

x = -2

$-2 - 3x = 4$   
 $-3x = 6$   
 $x = -2$

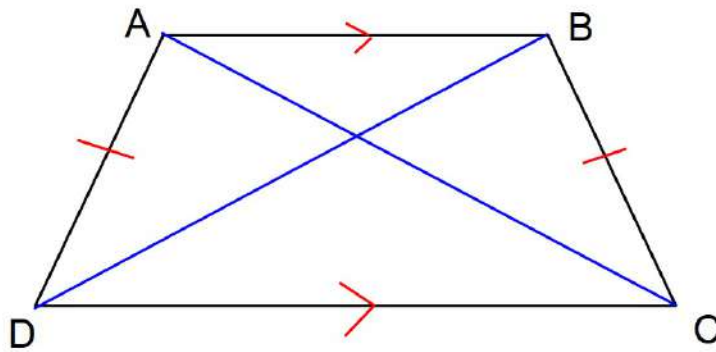
Trapezoid - A quadrilateral with exactly one pair of opposite sides parallel.



- The bases are the parallel sides
- Legs are the non parallel sides
- 2 pairs of base angles

### Isosceles Trapezoid

- Legs are congruent
- Both pairs of base angles are congruent
- Diagonals are congruent



$$\overline{AD} \cong \overline{BC}$$

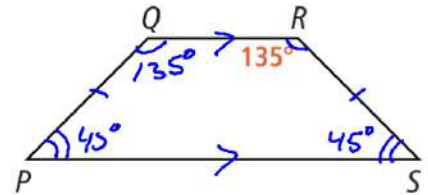
$$\angle A \cong \angle B; \angle C \cong \angle D$$

$$\overline{BD} \cong \overline{AC}$$



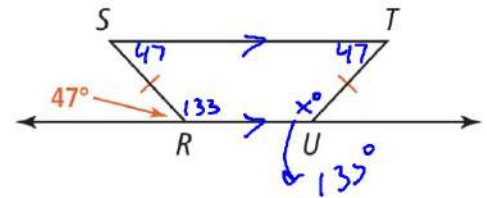
3. a. Given isosceles trapezoid  $PQRS$ , what are  $m\angle P$ ,  $m\angle Q$ , and  $m\angle S$ ?

Enter your answer.



3. b. Given  $\overline{ST} \parallel \overline{RU}$ , what is the measure of  $\angle TUR$ ?

Enter your answer.



All horizontal beams of the high-voltage transmission tower are parallel to the ground. The top section is an isosceles trapezoid. The center section is an isosceles trapezoid.

A. If  $m\angle 1 = 138$ , what is  $m\angle 2$ ?

$$= 42^\circ$$

**SOLUTION**

