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 $\angle AXB$?

Because in a kite, diagonals are \perp.

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

Enter your answer.

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

Enter your answer.
Quadrilateral $PQRS$ is a kite with diagonals $QS$ and $PR$.

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 answer: \(58^\circ\)

b. What is $m\angle 2$? \(= 32^\circ\)
In kite $WXYZ$, $\angle WXY = 104^\circ$, and $\angle VYZ = 49^\circ$. Find each measure.

1. $\angle VZY = 111^\circ$
2. $\angle VXW = 63^\circ$
3. $\angle XWZ = 54^\circ$

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

4. $\angle XDA = 58^\circ$
5. $\angle ABC = 122^\circ$
6. $\angle BCD = 52^\circ$
Find the value of $x$.

OB = (8 + $x$) in; OD = 5 in
OL = (2$x$ - 2) ft; OM = 35 ft; MN = 37 ft
OQ = 33 yd; RS = 65 yd; OR = (7$x$) yd

$\sqrt{5^2 + 5^2} = \sqrt{25 + 25} = \sqrt{50} = 5\sqrt{2}$

$\sqrt{24^2 + 7^2} = \sqrt{576 + 49} = \sqrt{625} = 25$

$\sqrt{625} = \sqrt{25^2} = 25$

$\sqrt{(7x)^2 + 35^2} = 65$

$49x^2 + 1025 = 4225$

$(7x)^2 + 35^2 = 65^2$

$49x^2 = 3134$

$\frac{7x}{25} = \frac{25}{25}$

$x = 4$

$y = \sqrt{4}$

$\sqrt{49y^2} = \sqrt{49}$

$y = 7$

$x = 8$

$x = -2$

$-2 - 3x = 4$

$-3x = 6$

$x = -2$
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 $m\angle 1 = 138^\circ$, what is $m\angle 2$?

$= 42^\circ$