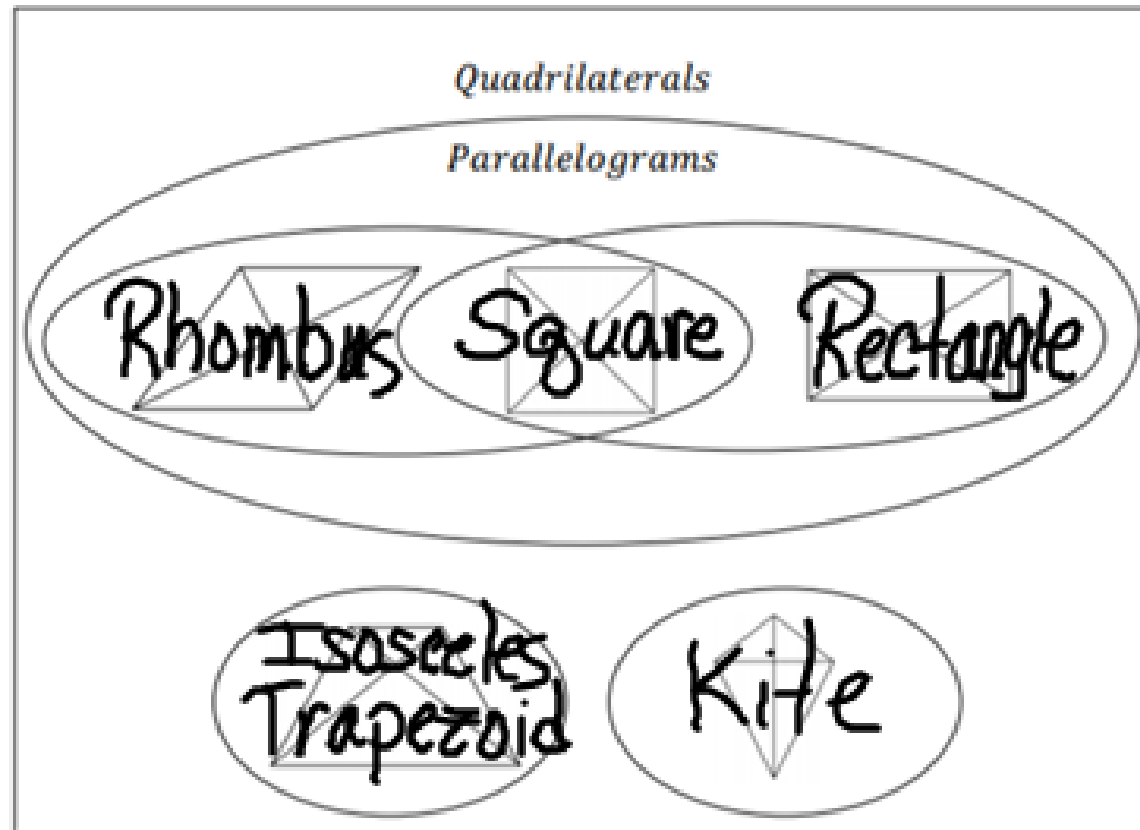


Name the specific quadrilaterals in the Venn Diagram below.

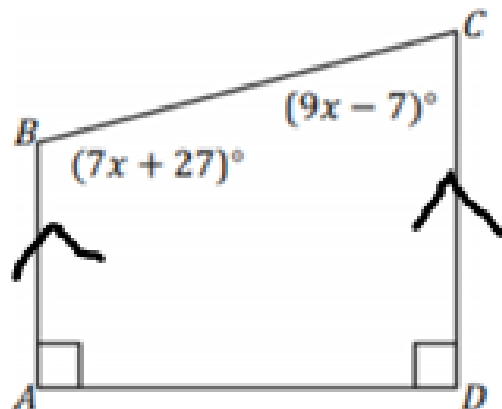




Characteristics of Quadrilaterals

Polygon	Opposite Sides	Adjacent Sides	Angles	Diagonals
Parallelogram	\parallel \cong		opp \cong Suppl	bisect ea other
Rhombus	\parallel \cong	\parallel	opp \cong Suppl	bisect ea other bisect opp \angle s \perp
Square	\parallel \cong	\perp	opp \cong all \cong Suppl	bisect ea other bisect opp \angle s \perp & \cong
Rectangle	\parallel \cong	\perp	opp \cong all \cong Suppl	bisect ea other \cong
Isosceles Trapezoid	\perp PR \cong \perp PR \parallel		base \angle s \cong Suppl	\cong
Kite		\parallel	\perp PR opp \angle s \cong	\perp , \perp dia bisects the other bisect opp \angle s

Find the measure of each interior angle.



$$\begin{aligned}\angle A \& \angle D &= 90 \\ \angle B &= 7(10) + 27 \\ &= 97^\circ \\ \angle C &= 9(10) - 7 \\ &= 83^\circ\end{aligned}$$

$$\begin{aligned}7x + 27 + 9x - 7 &= 180 \\ 16x + 20 &= 180 \\ -20 \quad -20 & \\ \hline 16x &= 160 \\ x &= 10\end{aligned}$$

Classify the following descriptive statements as quadrilaterals or non-quadrilaterals. If the statements describe a non-quadrilateral, explain why.

- a. A figure with $m\angle a = 91$, $m\angle b = 72$, $m\angle c = 86$, and $m\angle d = 93$.

$$91 + 72 + 86 + 93 = 342$$

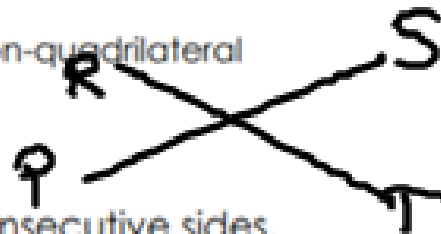
- Quadrilateral Non-quadrilateral

$$342 \neq 360$$

- b. A figure with two diagonals, \overline{RT} and \overline{PS} , with endpoints that are two nonadjacent vertices.



- Non-quadrilateral



- c. A figure with only three consecutive sides.

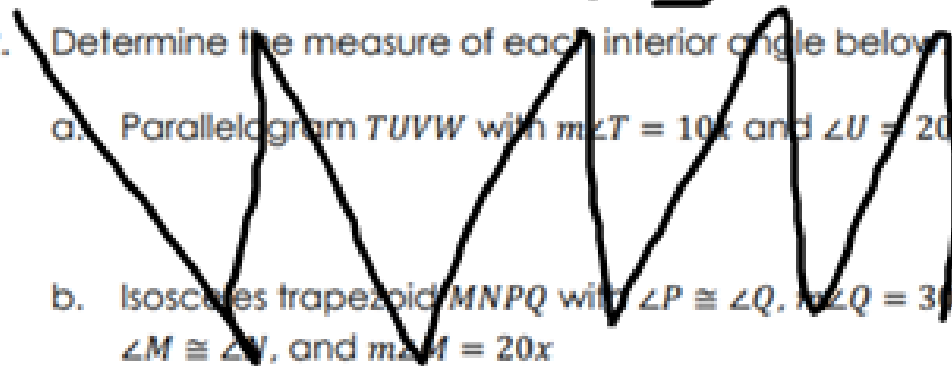
- Quadrilateral Non-quadrilateral

Need 4 sides

2. Determine the measure of each interior angle below

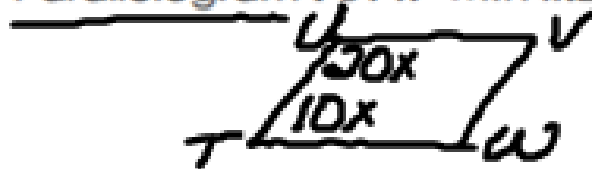
- a. Parallelogram $TUVW$ with $m\angle T = 10x$ and $\angle U = 20x$

- b. Isosceles trapezoid $MNPQ$ with $\angle P \cong \angle Q$, $m\angle Q = 30x$, $\angle M \cong \angle N$, and $m\angle M = 20x$



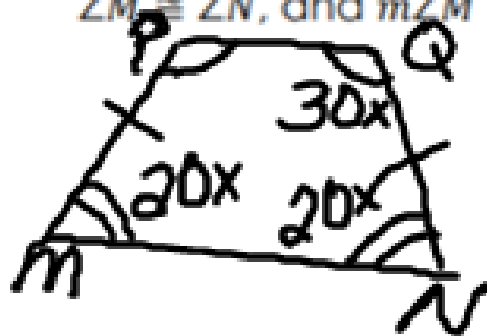
2. Determine the measure of each interior angle below.

a. Parallelogram $TUVW$ with $m\angle T = 10x$ and $\angle U = 20x$



$$\begin{aligned} 10x + 20x &= 180 & m\angle T &= 60 \\ 30x &= 180 & m\angle U &= 120 \\ x &= 6 \end{aligned}$$

b. Isosceles trapezoid $MNPQ$ with $\angle P \cong \angle Q$, $m\angle Q = 30x$,
 $\angle M \cong \angle N$, and $m\angle M = 20x$



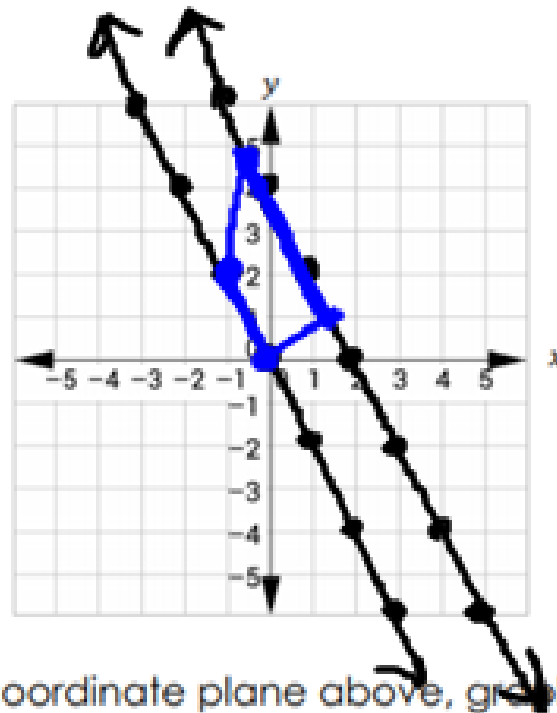
$$\begin{aligned} 20x + 30x &= 180 \\ 50x &= 180 \\ x &= 3.6 \\ \angle P = \angle Q &= 30(3.6) \\ &= 108^\circ \\ \angle M = \angle N &= 20(3.6) \\ &= 72^\circ \end{aligned}$$

The quadrilateral $ABCD$ has the following characteristics.

$$y = mx + b$$

\overline{AD} can be represented by the equation $y = -2x$ where $-1 \leq x \leq 0$.

\overline{BC} can be represented by the equation $y = -2x + 4$ where $-0.5 \leq x \leq 1.5$.

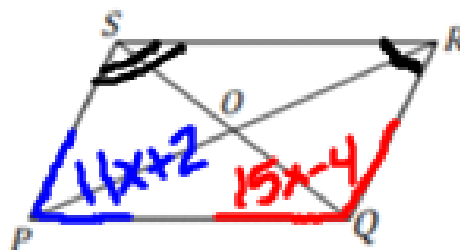


- On the coordinate plane above, graph the figure represented by the information given.
- Describe the type of quadrilateral represented above.

Trapezoid

2. Consider parallelogram $PQRS$ again.

If $m\angle SPQ = 11x + 2$ and
 $m\angle PQR = 15x - 4$, find $m\angle QRS$
and $m\angle RSP$.



$$11x + 2 + 15x - 4 = 180$$

$$26x - 2 = 180 \quad m\angle QRS = 1(7) + 2 = 79^\circ$$

$$\begin{array}{r} 26x - 2 = 180 \\ + 2 \quad + 2 \\ \hline 26x = 182 \end{array} \quad m\angle RSP = 15(7) - 4 = 101^\circ$$

$$x = 7$$