

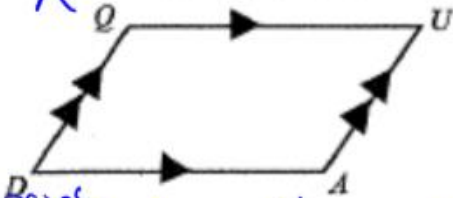
A **Parallelogram** is defined as a quadrilateral with **both pairs** of opposite sides **parallel**.

Does the given information make the **QUADRILATERAL** a **PARALLELOGRAM**?

If the information does not **guarantee** a parallelogram, sketch a counterexample that demonstrates another possible shape having the same characteristics.

1) Will this always form a parallelogram?

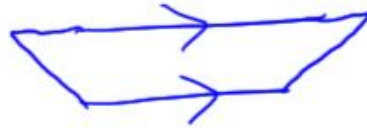
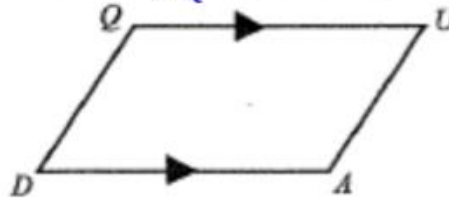
Yes No (provide a counterexample)



Both pairs opp. sides $\parallel \rightarrow$

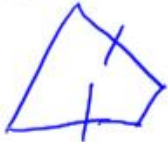
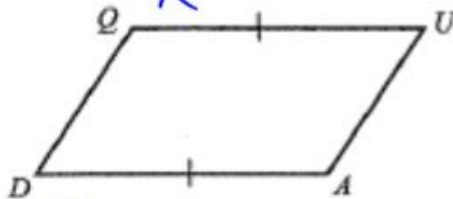
2) Will this always form a parallelogram?

Yes No (provide a counterexample)



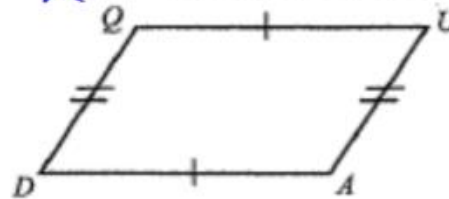
3) Will this always form a parallelogram?

Yes No (provide a counterexample)



4) Will this always form a parallelogram?

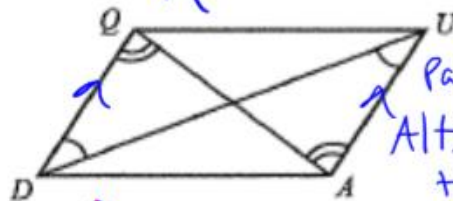
Yes No (provide a counterexample)



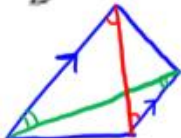
Both pairs opp sides $\cong \rightarrow$

5) Will this always form a parallelogram?

Yes No (provide a counterexample)

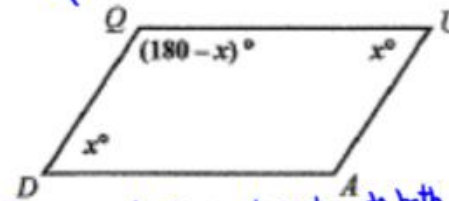


Parallel by Alt. Int. \angle 's theorem



6) Will this always form a parallelogram?

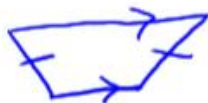
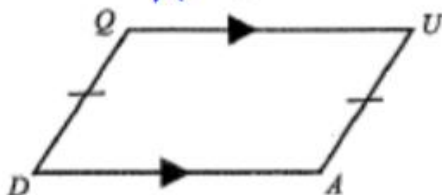
Yes No (provide a counterexample)



If one angle is supplementary to both consecutive angles then its a parallelogram.

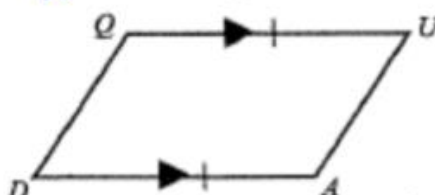
7) Will this always form a parallelogram?

Yes No (provide a counterexample)



8) Will this always form a parallelogram?

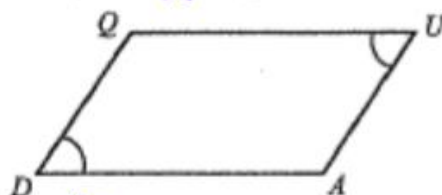
Yes No (provide a counterexample)



If one pair of opp. sides is \cong and $\parallel \rightarrow \square$

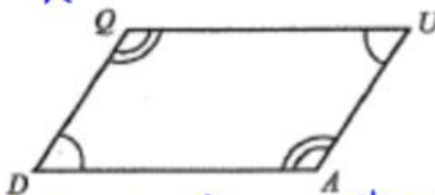
9) Will this always form a parallelogram?

Yes No (provide a counterexample)



10) Will this always form a parallelogram?

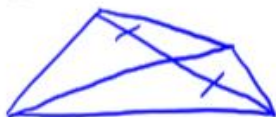
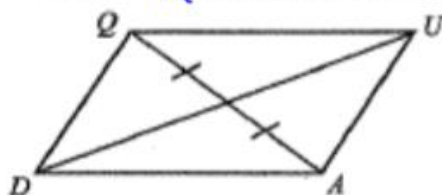
Yes No (provide a counterexample)



If both pairs of opp. \angle 's are $\cong \rightarrow \square$

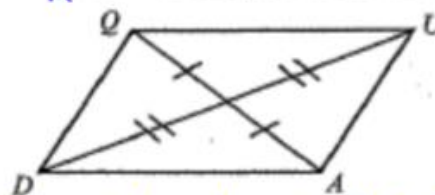
11) Will this always form a parallelogram?

Yes No (provide a counterexample)



12) Will this always form a parallelogram?

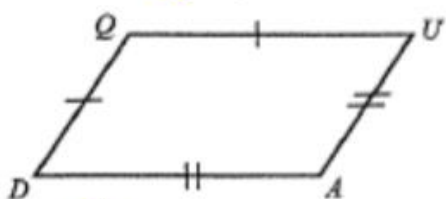
Yes No (provide a counterexample)



If diagonals bisect each other $\rightarrow \square$

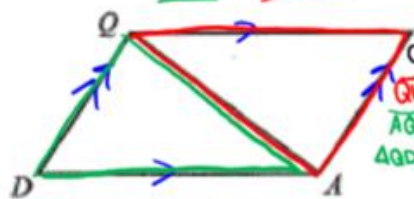
13) Will this always form a parallelogram?

Yes No (provide a counterexample)



14) Given: $QUAD$ is a parallelogram

Prove: $\triangle QDA \cong \triangle AUQ$



S | R

$QUAD$ is \square Given
 \square opposite sides \cong
 \rightarrow Reflexive Prop.
 SSS

$QU = QU$
 $QD \cong UA$
 $QA \cong DA$
 $\triangle QDA \cong \triangle AUQ$