

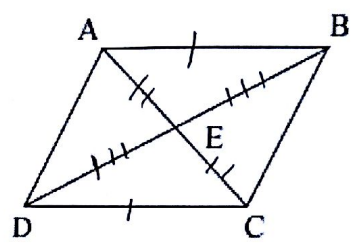
key

Parallelogram Overview

1. Complete the following proof by filling in each statement. Remember to mark all given information on the diagram.

Given: ABCD is a parallelogram

Prove: $\triangle ABE \cong \triangle CDE$

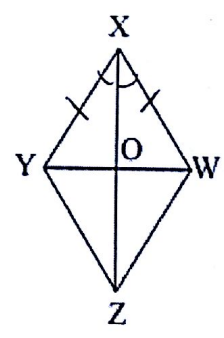


| Statement | Reason |
|--|--|
| 1. ABCD is a parallelogram | Given |
| 2. $AB \cong CD$ | 2. In a parallelogram, opposite sides are congruent. |
| 3. $AE \cong CE$ | 3. In a parallelogram, diagonals bisect each other. |
| 4. $BE \cong DE$ | 4. In a parallelogram, diagonals bisect each other. |
| 5. $\triangle ABE \cong \triangle CDE$ | 5. Side-Side-Side congruence |

2. Mark the given information on the diagram. Give a reason for each step in the two-column proof. Choose the reason for each statement from the list below.

Given: $\overline{YX} \cong \overline{WX}$
 \overline{ZX} bisects $\angle YXW$

Prove: $\overline{YZ} \cong \overline{WZ}$



$YX \cong WX$
given

ZX bisects $\angle YXW$
given

$\angle YXZ \cong \angle WXZ$
def. of bisector

$\triangle YXZ \cong \triangle WXZ$
SAS

$YZ \cong WZ$
CPCTC

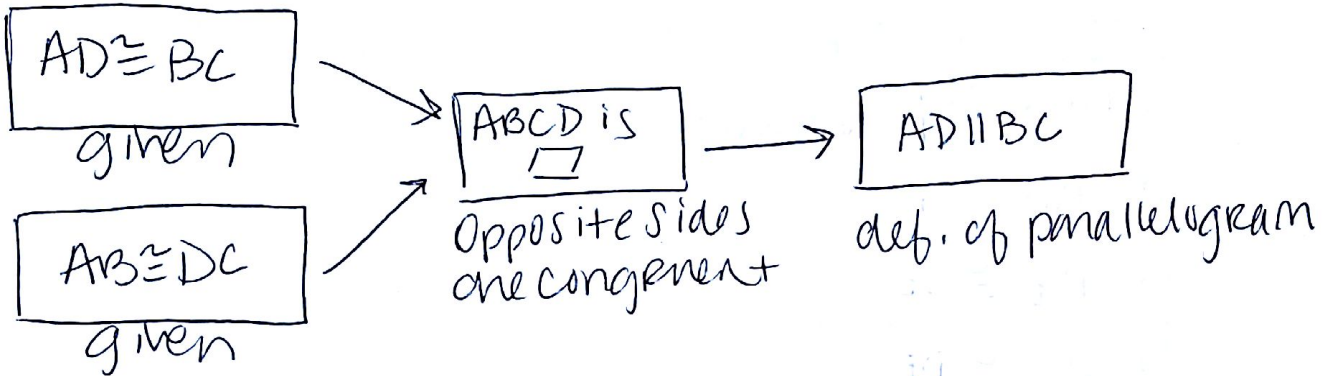
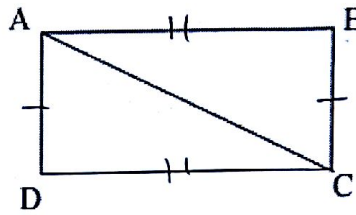
$XZ \cong XZ$
reflexive

3. Create a flow proof for the following...

Mark the given information on the diagram. Give a reason for each step in the two-column proof. Choose the reason for each statement from the list below.

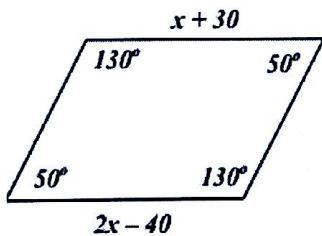
Given: $\overline{AD} \cong \overline{BC}$
 $\overline{AB} \cong \overline{DC}$

Prove: $\overline{AD} \parallel \overline{BC}$



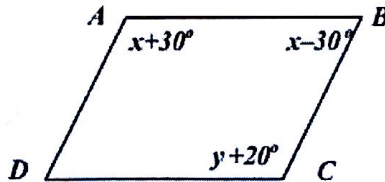
4. Solve for the unknown variables

A)



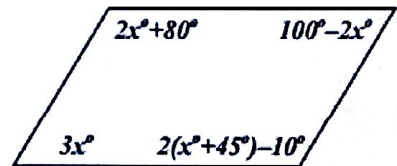
$x = 70$

B)



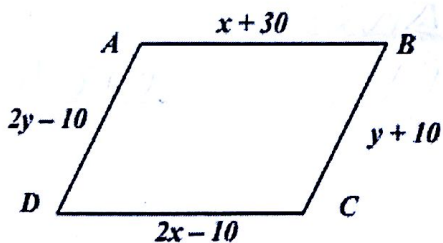
$x = 90$
 $y = 70$

C)



$x = 20$

5. Find the parameter of the following



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