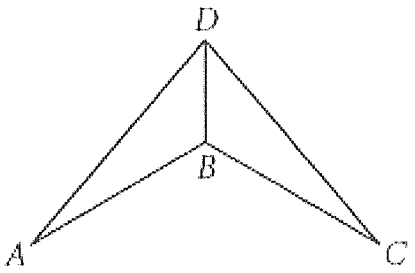
Name:

Homework #5-7: Proofs + More

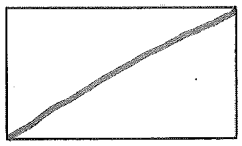
Proof #1: Create a 2 column proof.

2. Given: Dart $ABCD$ with $\overline{AB} \cong \overline{BC}$ and $\overline{CD} \cong \overline{AD}$

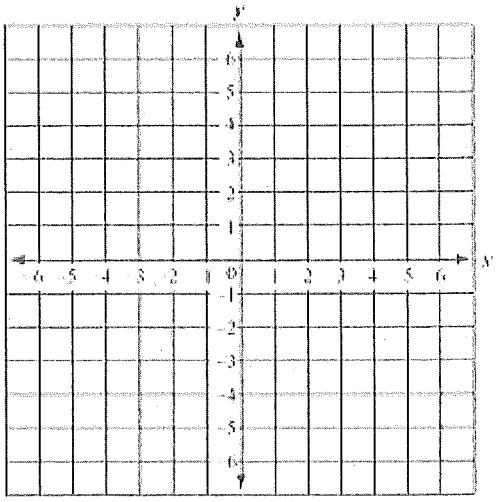
Show: $\angle A \cong \angle C$



Proof #2: Create a 2 column proof that shows one diagonal of a rectangle divides the rectangle into 2 congruent triangles.



Proof #3: Prove that a figure with vertices A (1,2), B (2,5), C (5,7) and D (4,4) is a parallelogram by using *slopes*.



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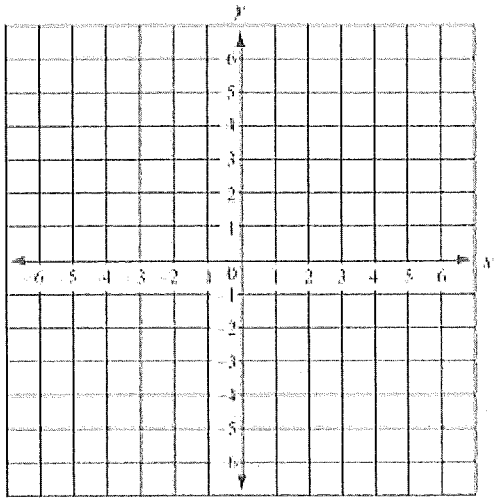
Proof #4: Prove that quadrilateral A(1, -2), B (13, 4), C (6, 8) and D(-2, 4) is either a parallelogram or a trapezoid using slopes.

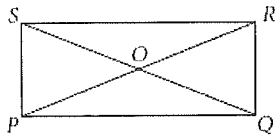


1. $PQRS$ is a rectangle and $OS = 16$.

   $OQ =$ _____

   $m\angle QRS =$ _____

   $SQ =$ _____

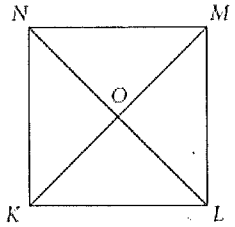


2. $KLMN$ is a square and $NM = 8$.

   $m\angle OKL =$ _____

   $m\angle MOL =$ _____

   Perimeter $KLMN =$ _____

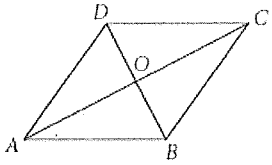


3. $ABCD$ is a rhombus, $AD = 11$, and $DO = 6$.

   $OB =$ _____

   $BC =$ _____

   $m\angle AOD =$ _____



In Exercises 5–13, match each description with all the terms that fit it.

a. Trapezoid b. Isosceles triangle c. Parallelogram d. Rhombus

e. Kite f. Rectangle g. Square h. All quadrilaterals

5. _____ Diagonals bisect each other.

6. _____ Diagonals are perpendicular.

7. _____ Diagonals are congruent.

8. _____ Measures of interior angles sum to 360°.

9. _____ Opposite sides are congruent.

10. _____ Opposite angles are congruent.

11. _____ Both diagonals bisect angles.

12. _____ Diagonals are perpendicular bisectors of each other.

13. _____ Has exactly one pair of congruent sides.