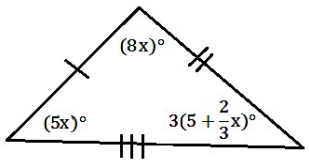
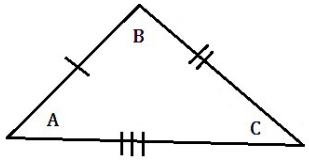
11.4H Just Prove It!

Name: _____Per: _____

SHOW YOUR WORK AND WORK IN PENCIL

1. Find the following angle measurements.

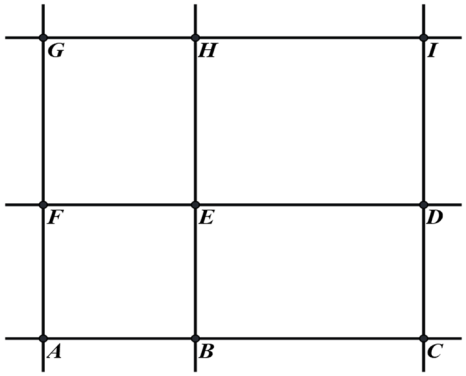




a. $m\angle A =$ _____ b. $m\angle B =$ _____ c. $\measuredangle C =$ _____

d. Explain why you can find the angle measurements for the second triangle.

2. Using the image right, find the coordinates for the following if E(0, 0) and C(5, −4)



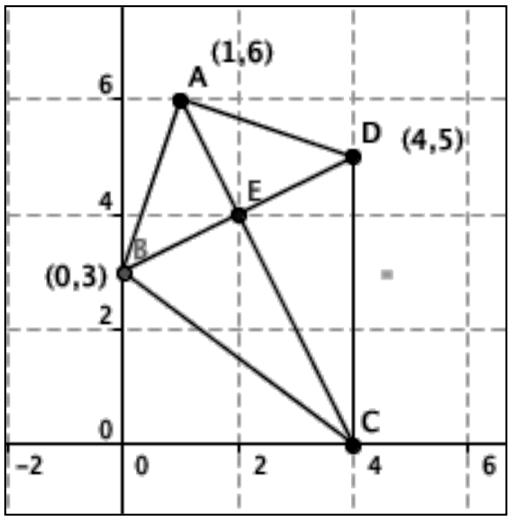
a. I(___, 6) A(–4, ___)

Find the length of the indicated line segment.

b. $\overline{HD}$= $\overline{IG}$= $\overline{AI}$=

3. Complete the mathematical statements about the kite using the given symbols (≅ ⊥ // < > =). **Justify** each statement **ALGEBRAICALLY** or with a **THEOREM**.

Proof



a. BC _____DC

b. BD _____AC

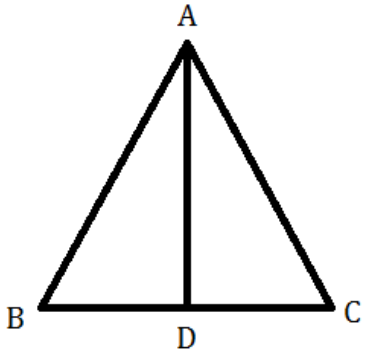
c. ΔABC _____ ΔADC

d. BE _____ ED

e. AE _____ ED

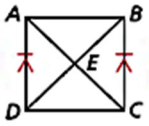
4. List 5 things you can prove from an isosceles triangle with a perpendicular bisector. **Explain why** you can prove those things.

- 1. _____
- 2._____
- 3._____
- 4._____
- 5._____

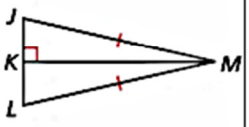


Proving Triangles Congruent: Use two-column proofs for **4 of the problems P1-P6** below on a separate piece of paper. Your proof must be complete and correct!

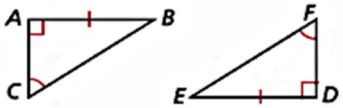
P1. Use AAS to prove the triangles congruent.
Given: $\overline{AD} \parallel \overline{BC}, \overline{AD} \cong \overline{CB}$
Prove: $\triangle AED \cong \triangle CEB$



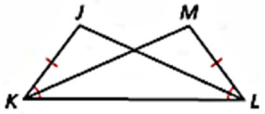
P2. Given: $\overline{KM} \perp \overline{JL}, \overline{JM} \cong \overline{LM}, \angle JMK \cong \angle LMK$
Prove: $\triangle JKM \cong \triangle LKM$



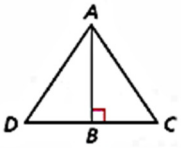
P3. Given: $\overline{AB} \cong \overline{DE}, \angle C \cong \angle F$
Prove: $\triangle ABC \cong \triangle DEF$



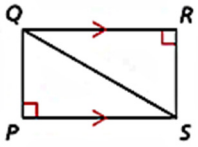
P4. Given: $\overline{JK} \cong \overline{ML}, \angle JKL \cong \angle MLK$
Prove: $\triangle JKL \cong \triangle MLK$



P5. Given: B is the midpoint of $\overline{DC}$. $\overline{AB} \perp \overline{DC}$
Prove: $\triangle ABD \cong \triangle ABC$

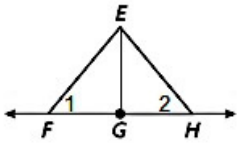


P6.
Use AAS to prove the triangles congruent.
Given: $\angle R$ and $\angle P$ are right angles.
$\overline{QR} \parallel \overline{SP}$
Prove: $\triangle QPS \cong \triangle SRQ$

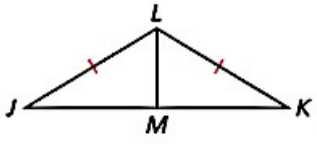


Use two-column proofs for **3 of the problems P7-11** below on a separate piece of paper. Choose 3 of the

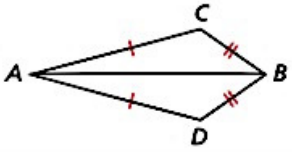
P7. Given: G is the midpoint of $\overline{FH}$.
$\overline{EF} \cong \overline{EH}$
Prove: $\angle 1 \cong \angle 2$



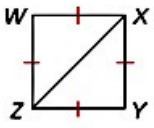
P8. Given: $\overline{LM}$ bisects $\angle JLK$. $\overline{JL} \cong \overline{KL}$
Prove: M is the midpoint of $\overline{JK}$.



P9. Given: $\overline{AC} \cong \overline{AD}, \overline{CB} \cong \overline{DB}$
Prove: $\overline{AB}$ bisects $\angle CAD$.



P10. Given: $\overline{WX} \cong \overline{XY} \cong \overline{YZ} \cong \overline{ZW}$
Prove: $\angle W \cong \angle Y$



P11. Given: M is the midpoint of $\overline{PQ}$ and $\overline{RS}$.
Prove: $\overline{QR} \cong \overline{PS}$