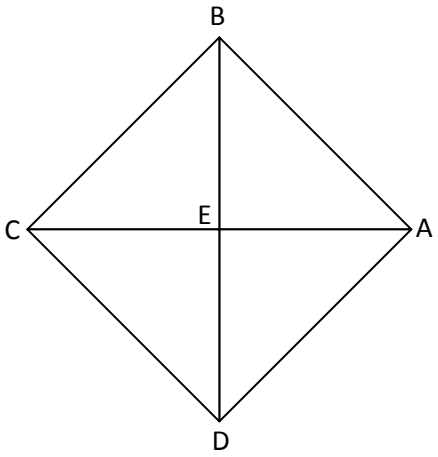
Name: _____ Date: _____ Section: _____

Geometry Unit 5 Homework Packet Supplement

Proof A (Day 2)

Given: $\overline{BED}$; $\overline{AED}$; ΔABC is isosceles with base $\overline{AC}$
$\overline{BE}$ bisects $\measuredangle ABC$

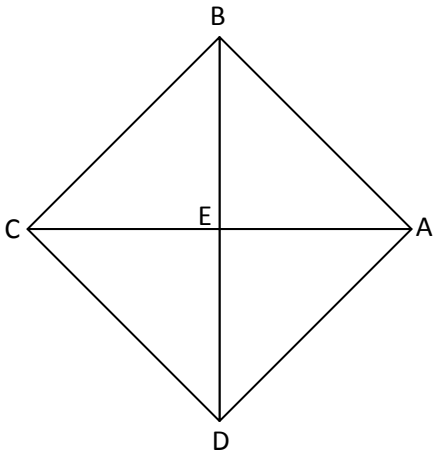
Prove: $\Delta CBE \cong \Delta ABE$



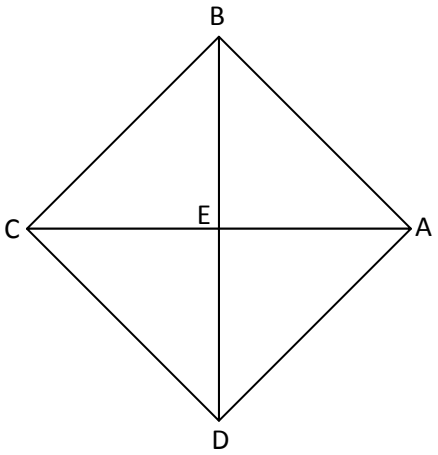
Proof B (Day 3)

Given: $\overline{BED}$; $\overline{AED}$;
$\overline{BE}$ is the perpendicular bisector of $\overline{AC}$

Prove: $\Delta DEC \cong \Delta DEA$



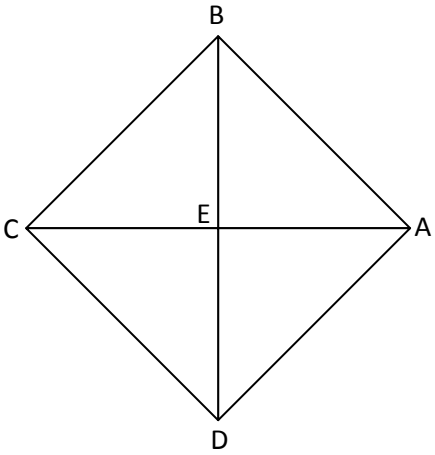
Proof C (Day 4)



Given: $\overline{BED}; \overline{AED}; \Delta ABC$ is isosceles with base $\overline{AC}$
$\overline{BE}$ is an altitude of $\triangle ABC$

Prove: $\Delta CBE \cong \Delta ABE$

Proof D (Day 5)



Given: $\overline{BED}; \overline{AED}; \overline{AD} \cong \overline{CD};$
$\overline{BE}$ is a median of $\triangle ABC$

Prove: $\Delta DEC \cong \Delta DEA$

Name_____Date_____Section_____

Geometry HW Unit 5 – Day 4 Worksheet

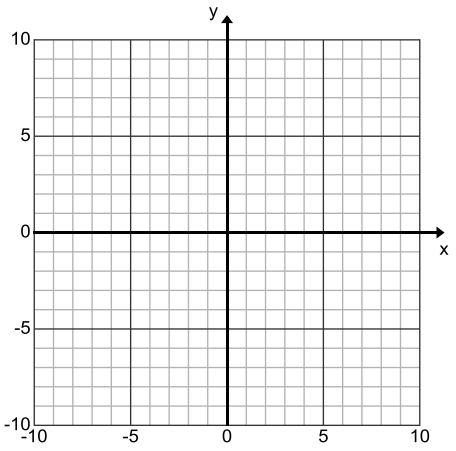
Recall point-slope equation for a line: $y - y_1 = m(x - x_1)$

1. An orthocenter was graphed and located on a vertex of the triangle.
   a. Sketch it:

   b. Classify the triangle by angle: _____. Explain your reasoning:

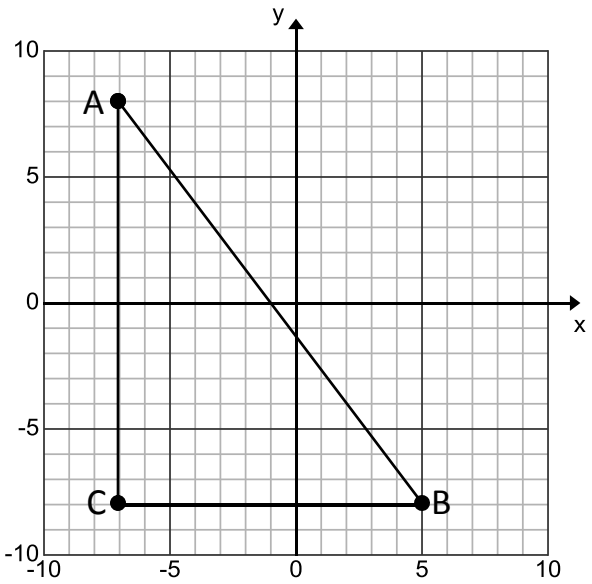
2. Write the equation of the line that is perpendicular to the line $4y = 3x - 2$ through the point (3,-5).

3. Review: Write the equation of the perpendicular bisector of the segment with endpoints A(0,5) and B(-2,-7). Use of the graph is optional.



4. Review: Determine the relationship between the lines $5y + 2x = 7$ and $10y = 4x - 3$. Justify your response.

5. (Discovery) Using the coordinate axes at right,



   a. Find the midpoint of $\overline{AB}$ using the midpoint formula (show all work). Plot and label it M on the graph and fill in the coordinates M: (____,____).

   b. Draw $\overline{CM}$. Calculate the length CM, showing all work (this will be an integer length) _CM =_____

   c. Is $\overline{CM}$ a **perpendicular** bisector of $\overline{AB}$? Why or why not? (Hint: compare the slopes).

   d. From your prior knowledge of triangles, what is $\overline{CM}$ in relation to $\triangle ABC$? _____

   e. Plot points N (-1,-8) and P (-7,0). Connect segments $\overline{AN}$ and $\overline{BP}$.

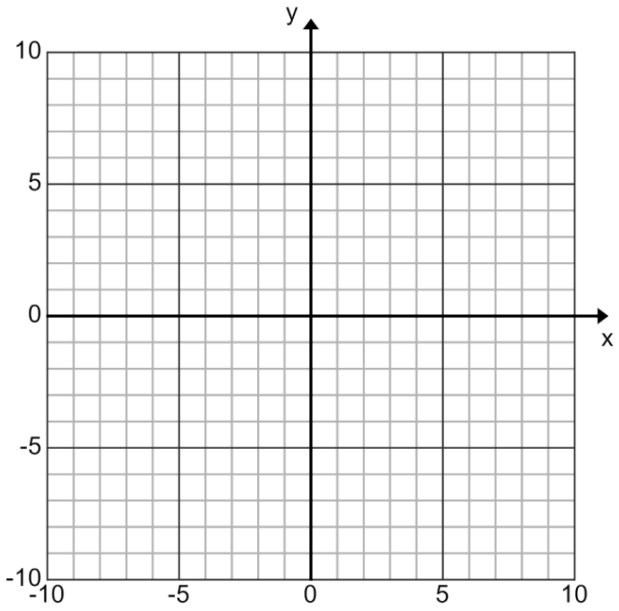
   f. Locate the intersection of $\overline{CM}$, $\overline{AN}$ and $\overline{BP}$. Label this point T. What are the coordinates of T *to the nearest integer*? T (____,____)

   g. What do you see about the possible relationship between $\overline{CT}$ and $\overline{CM}$? (Hint: how many $\overline{TM}$'s could fit along $\overline{CM}$?) Make a conjecture.

   h. Does your conjecture look like it might work for comparing $\overline{AT}$ with $\overline{AN}$ and $\overline{BT}$ with $\overline{BP}$?

Midsegment Theorem Proofs in the Coordinate Plane:

Proof E (Day 6)

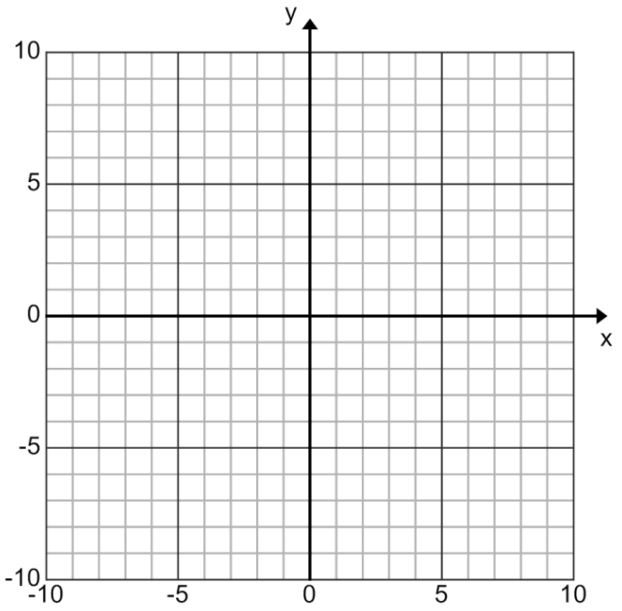


Given: X(-1,8), Y(9,2), Z(3,-4)
M(1,2) and N(6,-1)

Prove: $\overline{MN}$ is a midsegment of ΔXYZ
by the definition of a midsegment

Plan:

Proof F (Day 6)



Given: X(-1,8), Y(9,2), Z(3,-4)
M is the midpoint of $\overline{XZ}$.
N is the midpoint of $\overline{ZY}$.

Prove: $\overline{MN}$ is a midsegment of ΔXYZ
using the properties of a midsegment

Plan:

Day 5-7 Book Problem #54 if you don't have graph paper on you…

List the angles of ΔJKL in order from smallest to largest when J(-3,-2), K(3,6), L(8,-2).