Semester 1
Review Worksheet #3

Honors Geometry
Mr. Ferwerda

Name:_____

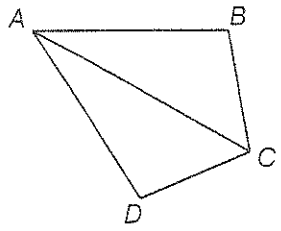
Chapter 4 (part 2)

Part E: In problems 1-3, write complete proofs.

1. Given: $\angle BCA \cong \angle DCA$
   $\overline{BC} \cong \overline{DC}$

   Prove: $\angle B \cong \angle D$

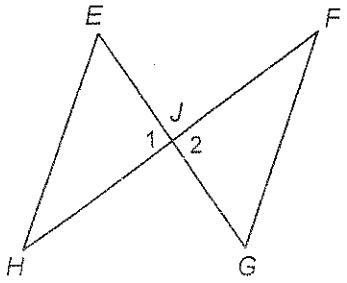
Conclusions | Justifications



2. Given: $\angle H \cong \angle F$
   J is the midpoint of $\overline{EG}$

   Prove: $\angle E \cong \angle G$

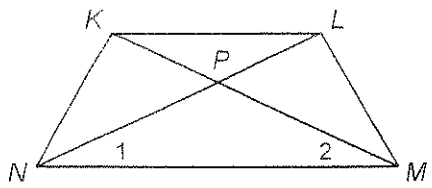
Conclusions | Justifications



3. Given: $\overline{KM} \cong \overline{LN}$
   $\overline{KN} \cong \overline{LM}$

   Prove: $\angle 1 \cong \angle 2$

Conclusions | Justifications



Chapter 5

Part A

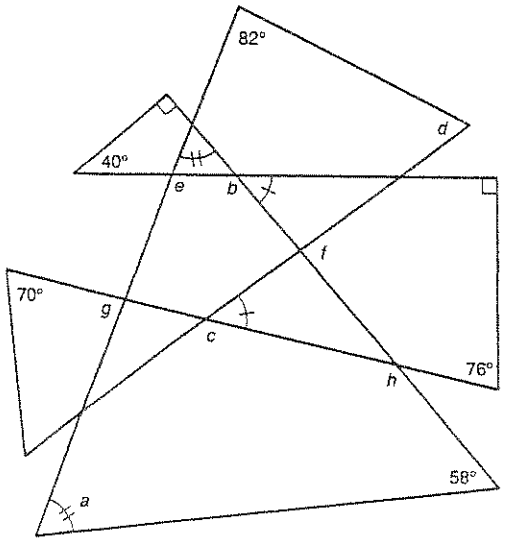
Complete each statement. *Give an answer besides *square*.

1. *The diagonals of a —?— are equal in length.
2. The three midsegments of a triangle divide the triangle into —?—.
3. An equiangular quadrilateral is usually called a —?—.
4. In an isosceles triangle, the base angles are —?—.
5. The diagonals of a parallelogram —?— each other.
6. Each angle of a regular octagon measures —?—.
7. The length of a midsegment of a trapezoid is the —?— of the lengths of the bases.
8. The vertex angles of a kite are —?— by the diagonal.
9. The consecutive angles of a parallelogram are —?—.
10. *The diagonals of a —?— are perpendicular bisectors of each other.
11. The length of a midsegment between two sides of a triangle is —?— the length of the third side.
12. The sum of the measures of the angles of a decagon is —?—.
13. The midsegment of a trapezoid is —?— to the two bases.
14. The diagonals of a kite are —?—.
15. The opposite angles of a parallelogram are —?—.

Part B

Determine the measure of each lettered angle in the figure below.

1. $a =$ _____
2. $b =$ _____
3. $c =$ _____
4. $d =$ _____
5. $e =$ _____
6. $f =$ _____
7. $g =$ _____
8. $h =$ _____



Part C

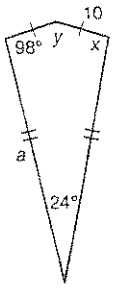
1–3. Give the value for each variable indicated.

1. Perimeter = 64

$a =$ _____

$x =$ _____

$y =$ _____

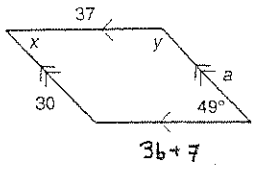


2. $a =$ _____

$b =$ _____

$x =$ _____

$y =$ _____

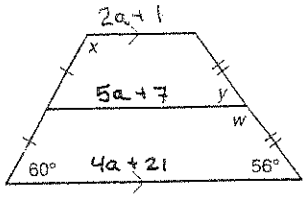


3. $a =$ _____

$w =$ _____

$x =$ _____

$y =$ _____



Part D: Use coordinates to prove the following.

1. Given: $X = (2, -1)$, $Y = (1, 6)$, and $Z = (-4, 1)$

Prove: ΔXYZ is an isosceles triangle

Conclusions	Justifications
0. $X = (2, -1)$, $Y = (1, 6)$, and $Z = (-4, 1)$	0. Given

Chapter 5 ½

Part A: Identify each statement as *true* or *false*.

1. You can determine the slope of a segment if you are given the coordinates of its endpoints.
2. The slope of a line depends on which points on the line you choose to calculate it.
3. If two distinct lines on a graph have the same slope then they are perpendicular.
4. If a graph has slope q and y-intercept $(0, r)$ then the equation for the line is $y = rx + q$.
5. If m is the slope of $\overline{AB}$, then the slope of a line parallel to $\overline{AB}$ has slope $-m$.

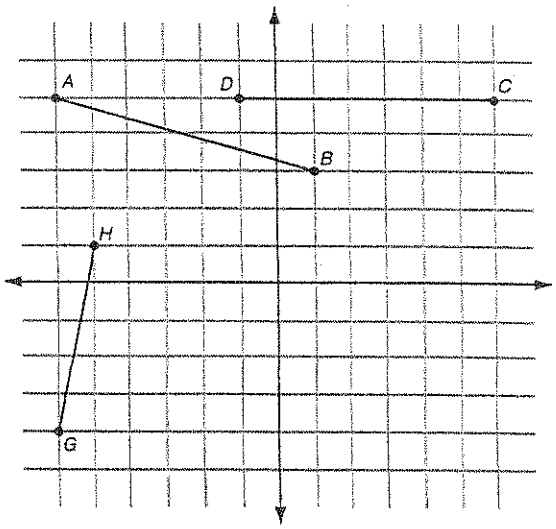
Part B: Find the slope, midpoint, and length of each of the segments below.

1. $\overline{AB}$:

   slope = _____

   midpoint = _____

   length = _____



2. $\overline{GH}$:

   slope = _____

   midpoint = _____

   length = _____

3. $\overline{CD}$:

   slope = _____

   midpoint = _____

   length = _____

Part C: Determine whether the lines are parallel, perpendicular, or neither. State the reason for your conclusion. The coordinates of the points are given below.

$W(1, 0)$ $X(3, 2)$ $Y(5, 1)$ $Z(8, 4)$

1. $\overleftrightarrow{WX}$ and $\overleftrightarrow{YZ}$

2. $\overleftrightarrow{WX}$ and $\overleftrightarrow{XY}$

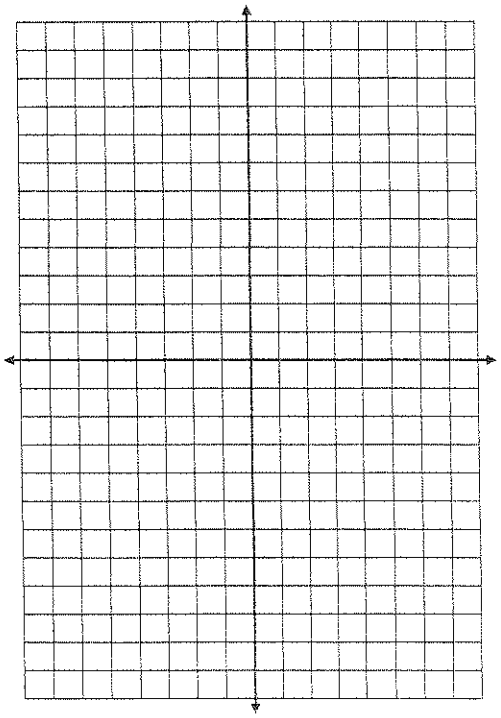
Part D

1. Write the equation of a line through the points with coordinates (4, 2) and (5, 1).

2. Write the equation of a line that is perpendicular to $y = 3x - 2$ and passes through the point with coordinates (6, 0).

3. Write the equation of the perpendicular bisector of the segment with endpoints (-2, -1) and (8, 5).

Part E: Graph the lines on the coordinate graph at the right.



1. $y = {}^{2}/_{5}\,x + 2$

2. $x + 3y = 6$

Part F: Solve the systems of equations.

1. $x = y + 10$
   $2y = x - 6$

2. $2x + 3y = -1$
   $3x + 5y = -2$