10/28/19

Aim: Review for Quarter 1 Exam

*You can pick up your tests at extra help today.

Do Now

Given point P(3,5)

$r_{x\text{-axis}}(3,-5)$ $R_{90^\circ}(-5,3)$

$r_{y\text{-axis}}(-3,5)$ $R_{180^\circ}(-3,-5)$

$r_{y=x}(5,3)$ $R_{270^\circ}(5,-3)$

$r_{y=-x}(-5,-3)$ $T_{-2,4}(1,9)$

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Name:_____ Date:_____

Geometry Common Core Quarter Test: Wed. October 30th

Quarter 1 Overview

Unit 1: Angles
*Know all vocabulary from this unit.
Parallel lines cut by a transversal
Auxiliary lines
Angles in triangles
Be able to justify your answers

Unit 2: Constructions
Copy a segment/angle
Bisect a segment/angle
Perpendicular bisector
Perpendicular line through a point
Equilateral triangle
Regular hexagon (given a side)
Hexagon inscribed in a circle
Equilateral triangle inscribed in a circle
Square inscribed in a circle
Parallel line

Unit 3: Centers of Concurrency
*Know all properties, constructions and algebraic applications
Incenter - Construct using angle bisectors
Circumcenter - Construct using perpendicular bisectors
Centroid - Construct using medians
Orthocenter - Construct using altitudes

Unit 4: Rigid Motions
A rigid motion preserves distance and angle measure.
The three basic rigid motions are *reflections, rotations,* and *translations.*
****Know your coordinate rules and constructions for reflections, rotations and translations!!!!

Study all notes from this Quarter!!

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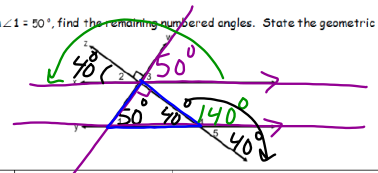
Unit 1 Examples

1) $m\angle 1 = 50°$, find the remaining numbered angles. State the geometric reason for each step.



Angle	Angle Measure	Reason
∠2	40°	Consec. adj ∠s on a line sum to 180
∠3	50°	Corresponding ∠'s
∠4	140°	Ext. ∠ theorem
∠5	40°	linear pairs are Supplementary

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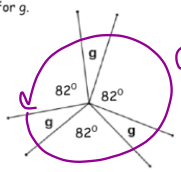
2) Solve for g.



Justification: consecutive adjacent ∠'s at point Sum to 360°

$3(82) + 3g = 360$

$246 + 3g = 360$

$\frac{3g}{3} = \frac{114}{3}$

$g = 38^\circ$

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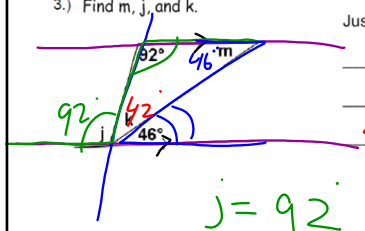
3.) Find m, j, and k.



Justifications:

- $\not\parallel \rightarrow \not=$
- Consec. adjacent ∠'s on a line Sum to 180°

$j = 92$

$m = 46$

$K = 42$

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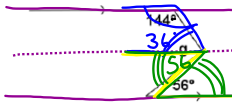
4) Find g.



Justifications:

Same side int. ∠'s

alt. int. ∠'s

∡ Sum postulate

$36 + 56 = 92$

$g = 92^\circ$

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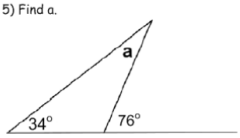
5) Find a.



Justifications:

Ext ∠ theorem

34 + a = 76

a = 42°

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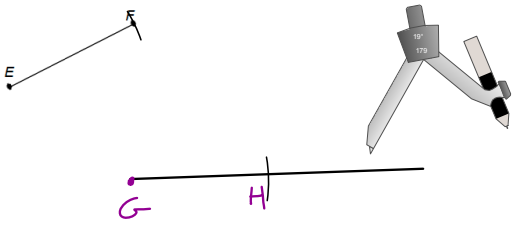
Unit 2 Examples:

1) Copy this line segment, and call your copy $\overline{GH}$.



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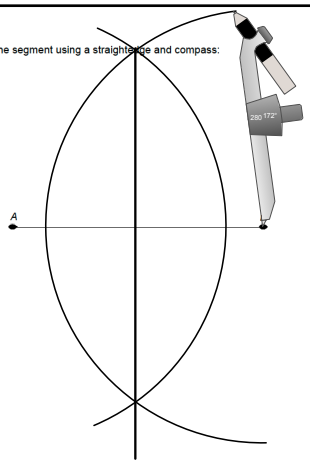
2) Bisect this line segment using a straightedge and compass:



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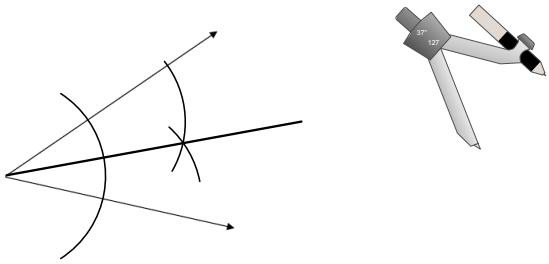
3) Construct the angle bisector of the given angle.



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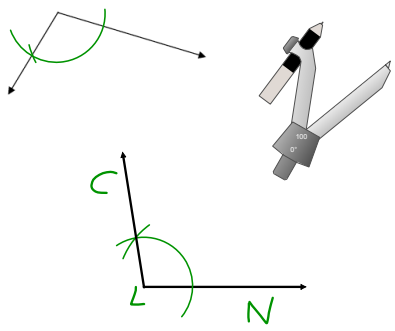
4) Construct a copy of this angle, and label it $\angle CLN$.



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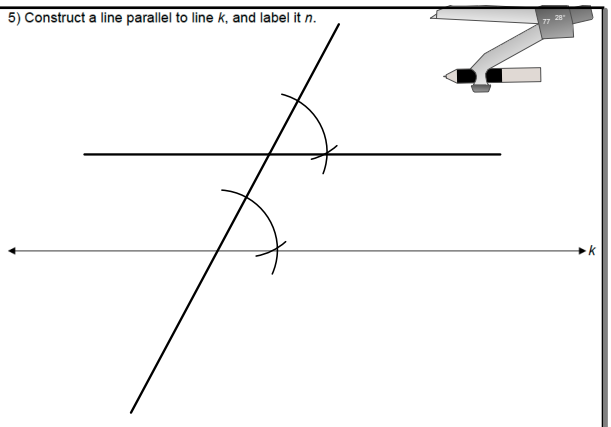
5) Construct a line parallel to line *k*, and label it *n*.



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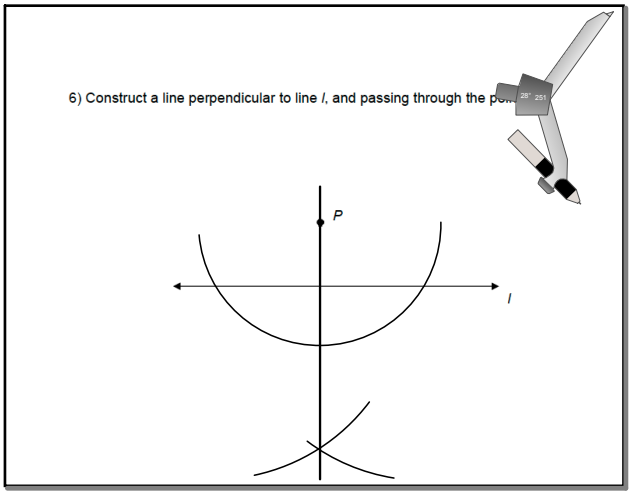

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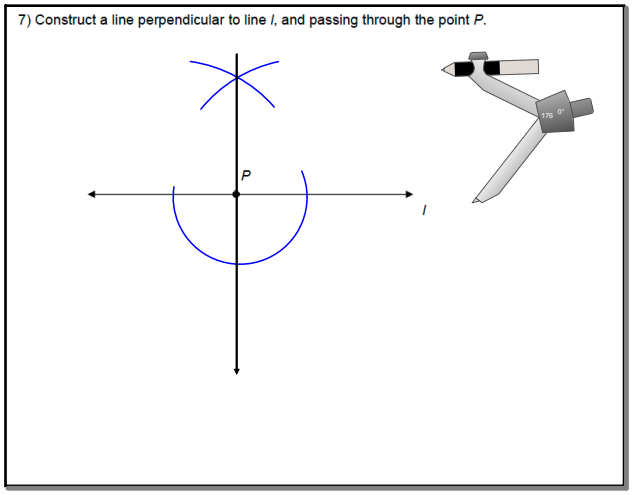

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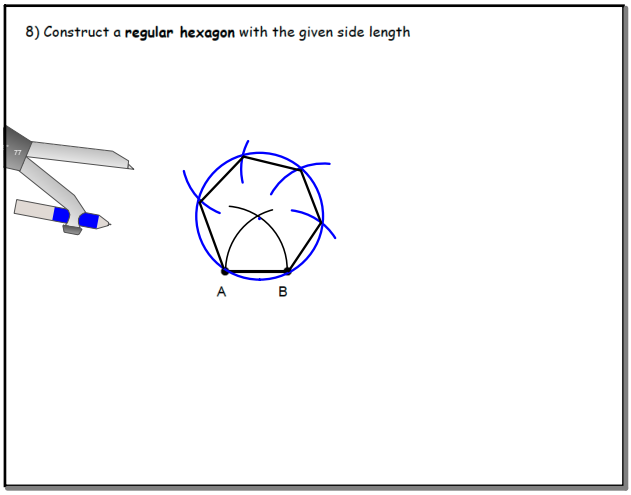

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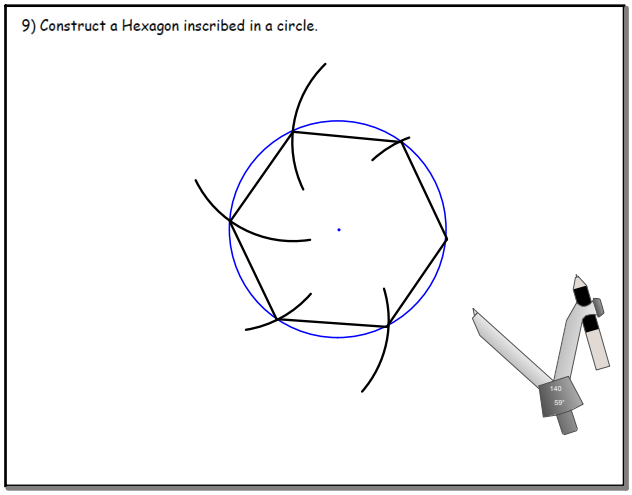

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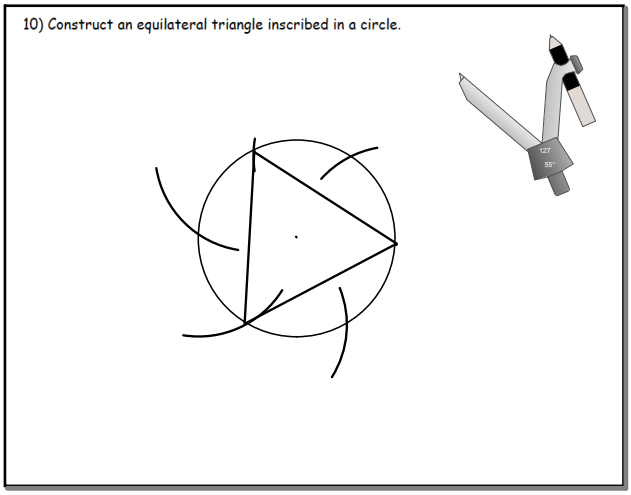

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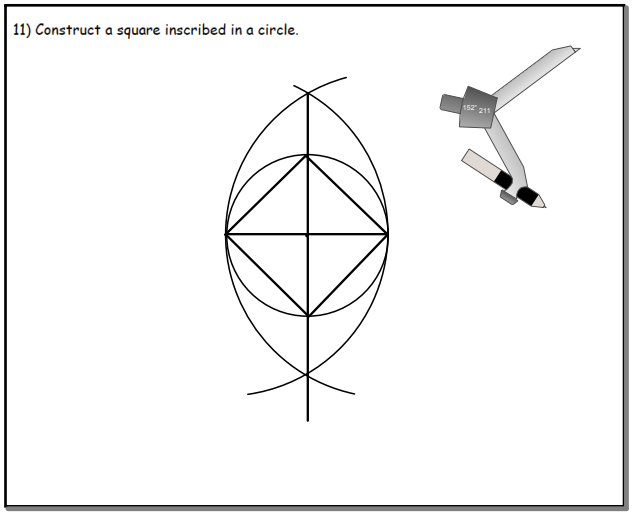

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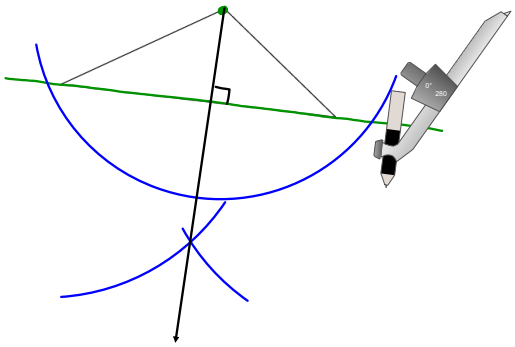
Unit 3 Examples:

1) Construct (with a compass and a straight edge) **an altitude** of the following triangle.



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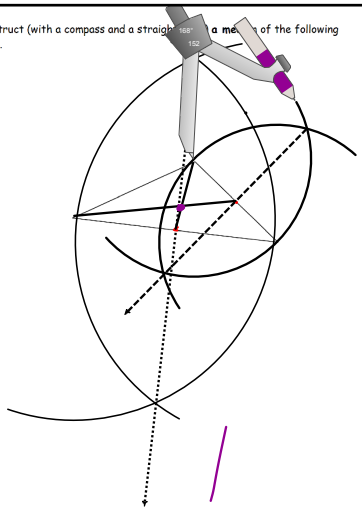
2) Construct (with a compass and a straight edge) a median of the following triangle.



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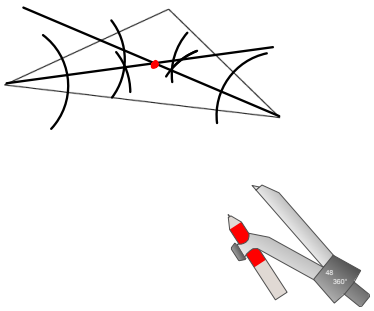
3) Construct (with a compass and a straight edge) the **incenter** of the following triangle.



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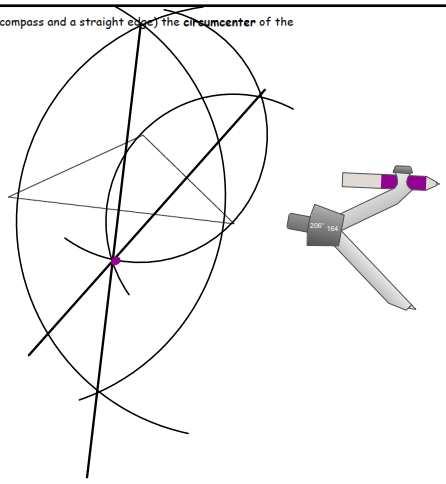
4) Construct (with a compass and a straight edge) the **circumcenter** of the following triangle.



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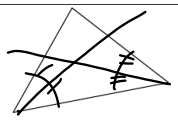
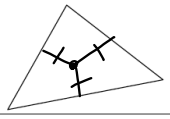
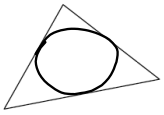
1. Name the 3 properties of the INCENTER.	
Intersection of the angle bisectors	
Equidistant from all 3 sides	
Center of the inscribed circle	

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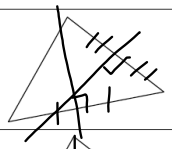
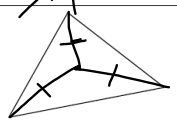
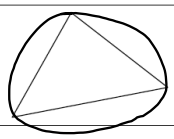
2. Name the 3 properties of the CIRCUMCENTER.	
Intersection of the perpendicular bisectors	
Equidistant from all 3 vertices	
Center of the circumscribed circle	

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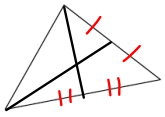
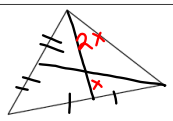
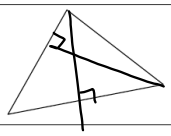
3. Name 2 properties of the CENTROID.	
a) Intersection of the medians	
b) 2:1 ratio	
4. Name the 1 property of the ORTHOCENTER.	
i) Intersection of the altitudes	

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1) The centroid of a triangle is the point of concurrency of what lines of a triangle?
A) medians C) altitudes
B) perpendicular bisectors of the sides D) bisectors of the angles

2) The circumcenter of a triangle is the point of concurrency of what lines of a triangle?
A) bisectors of the angles C) perpendicular bisectors of the sides
B) medians D) altitudes

3) The point which is equidistant from the three sides of a triangle is called the
A) incenter C) orthocenter
B) circumcenter D) centroid

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Unit 4 Examples:

1. Find the image of (-6, 2) under the given transformation.

a) Reflection in the y-axis (6,2)

b) Reflection in the x-axis (-6,-2)

c) Reflection in the line $y = x$ (2,-6)

d) The translation $T_{1,-7}$ (-5,-5)

e) Rotation of 90° about the origin (-2,-6)

f) Rotation of 180° about the origin (6,-2)

g) Rotation of 270° about the origin (2,6)

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2. A translation maps $(1,4)$ onto $(7,-3)$. Write the image of $(5,10)$ under the same translation.

$T_{6,-7}$

$(5,10) \rightarrow (11,3)$

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