Honors Geometry HW Assigned 8/28/17
Due 8/29/17

p 54-59

3. (a) $43^\circ 15' 17'' + 25^\circ 49' 18'' =$ $\boxed{69^\circ\ 4'\ 35''}$

(b)
$$\begin{array}{r} 89^\circ\ 59'\ 60'' \\ -\ 39^\circ\ \ 0'\ 17'' \\ \hline \end{array}$$
$\boxed{50'\ 59'\ 43''}$

4. (a) Change $46\frac{7}{8}^\circ$ to degrees, minutes, seconds

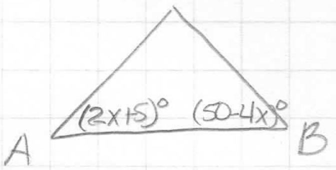
$46^\circ \left(\frac{7}{8}\right) \cdot \frac{60}{1} = \frac{420}{8} = 52\frac{1}{2}'$

$\boxed{46^\circ\ 52'\ 30''}$

(b) Change $132^\circ 6'$ to degrees

$\boxed{132\frac{6}{60} = 132\frac{1}{10}^\circ \text{ or } 132.1^\circ}$

7) If $\angle A \cong \angle B$, find $m\angle A$



$2x+5 = 50-4x$

$6x = 45$

$x = \frac{45}{6}$

$A = (2)\left(\frac{45}{6}\right) + 5 = \frac{90}{6} + \frac{30}{6} = \frac{120}{6}$ $\boxed{20^\circ}$

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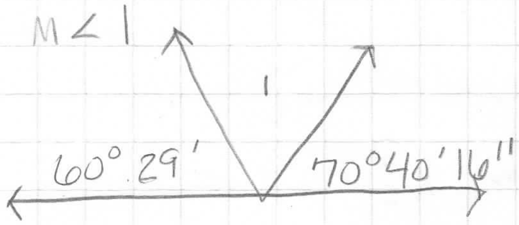
(29) Find $m\angle 1$



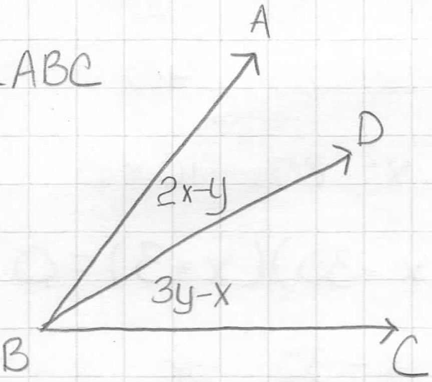
$\angle 1 = 180° - (60° 29' + 70° 40' 16")$

$\angle 1 = 180° - 131° 9' 16"$

$$\begin{array}{rrrr} \angle 1 = & 179° & 59' & 60" \\ - & 131° & 9' & 16" \\ \hline & \boxed{48°} & \boxed{50'} & \boxed{44"} \end{array}$$

(34) Given: $\overrightarrow{BD}$ bisects $\angle ABC$
$m\angle ABC = 25$

Solve for x and y



$2x - y = 3y - x$

$2x - y + 3y - x = 25$

$x + 2y = 25$

$10 + 2y = 25$

$2y = 15$

$y = \frac{15}{2}$

$y = 7.2$

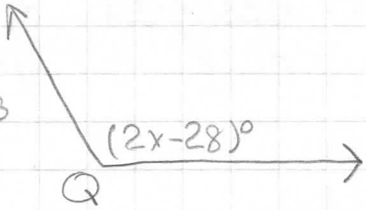
$3x - 4y = 0$

$\underline{2x + 4y = 50}$

$5x = 50$

$\boxed{\begin{array}{l} x = 10 \\ y = 7.5 \end{array}}$

35. $\angle Q$ is obtuse



(a) What are the limitations on $\angle Q$?

$$\boxed{90 < Q < 180}$$

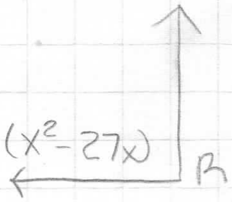
(b) what are the limitations on x?

$90 < 2x-28 < 180$

$118 < 2x < 208$

$$\boxed{59 < x < 104}$$

(36) Given that $\angle R$ is a right angle, solve for x



$x^2-27x=90$

$x^2-27x-90=0$

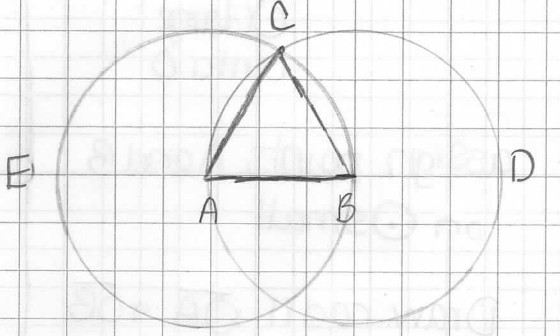
$(x-30)(x+3)=0$

$x=30$ or $x=-3$

Honors Geometry Assigned 8/31/17
Due 9/1/17

1. Proposition 1

Given: line segment AB
To do: construct triangle on line segment AB
prove: constructed triangle is equilateral

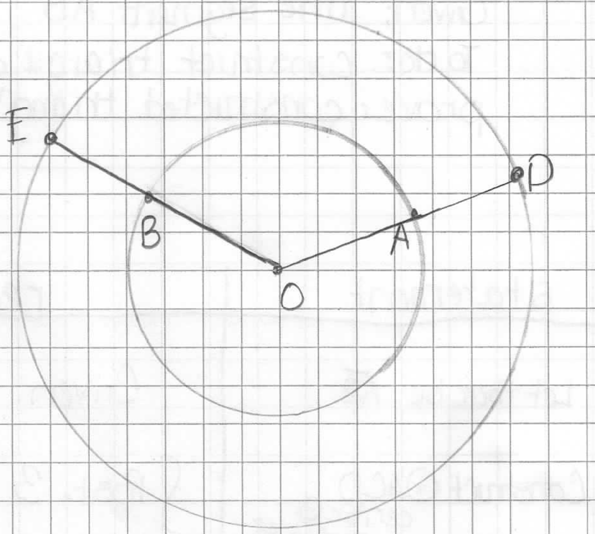


statement	reason
Let there be $\overline{AB}$	Given
Construct ⊙ACD center B radius AB; ⊙BCE center A radius AB	Post. 3
Draw $\overline{BC}$ and $\overline{AC}$	Post 1
$\overline{BC} = \overline{AB}$ $\overline{AC} = \overline{AB}$	radii of same ⊙ are =
$\overline{BC} = \overline{AB} = \overline{AC}$	CN1
∴ △ABC is equilateral	def of eq. △

2. If Euclid had chosen the point below line AB where the circles intersected, named the point "F" and had constructed the triangle with ABF as vertices, the logic of the proof would stay the same. The steps would stay the same. It does not matter which point he chooses.

(3) Given ⊙ small center O, ⊙ large center O

assign points A & B on ⊙ small



Statement	Reason
Construct ⊙ small, ⊙ large center O	Given
assign points A and B on ⊙ small	Given
Draw radii $\overline{OA}$ & $\overline{OB}$	Post 1
Extend $\overline{OA}$ to ⊙ large and name point D	Post 2
Extend $\overline{OB}$ to ⊙ large and name point E	Post 2
$\overline{OA} = \overline{OB}$ $\overline{OD} = \overline{OE}$	Radii of same ⊙ are =
$\overline{OD} = \overline{OA} + \overline{AD}$ $\overline{OE} = \overline{OB} + \overline{BE}$	CN 5
$\overline{OA} + \overline{AD} = \overline{OB} + \overline{BE}$	Substitution
$\therefore \overline{AD} = \overline{BE}$	Converse of CN 1 if the sums are equal, then the parts ($\overline{AD}$ & $\overline{BE}$) added to equal parts ($\overline{OA}$ & $\overline{OB}$) are also equal.

(4) In the figure of Prop. 1 if I wanted to double the length of $\overline{AB}$ I could apply postulate 2 and extend the segment. I would only need to extend it either to the right until I reached the other side of ⊙ACD or to the left until I reached the other side of ⊙BCE. The line would be doubled because I would have extended a radius to a diameter.