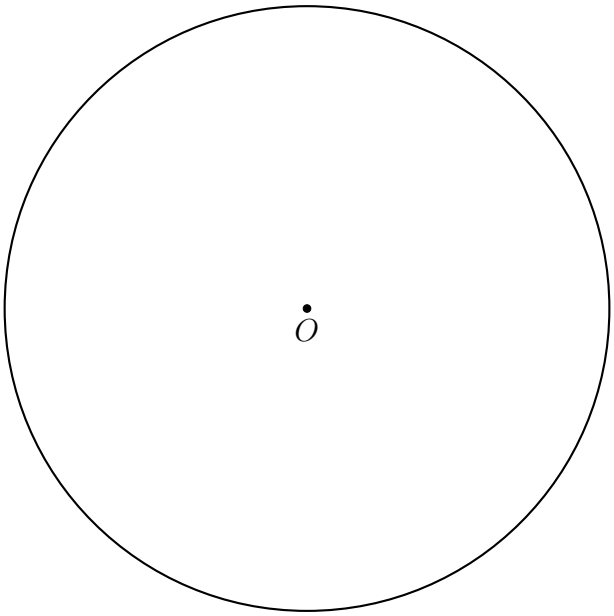
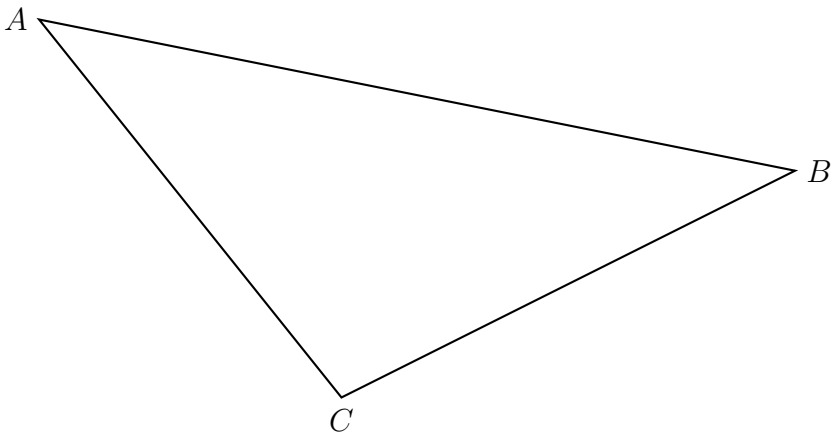
13.6 Do Now: Angle relationships

Use only a compass and straightedge for these classical constructions, showing all construction marks.

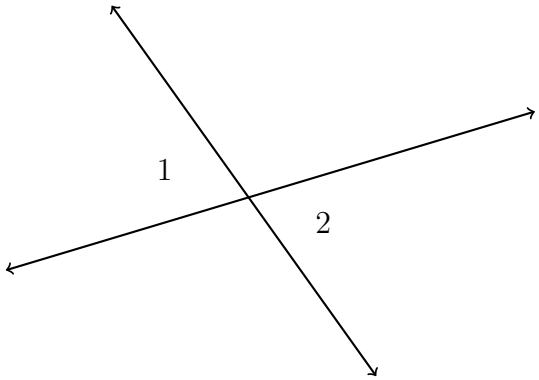
1. With a compass and straightedge, construct a hexagon inscribed in circle O.



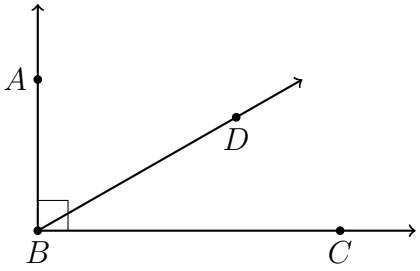
2. Using a compass and straightedge, construct the median from vertex B to the midpoint of $\overline{AC}$ in $\triangle ABC$ below.



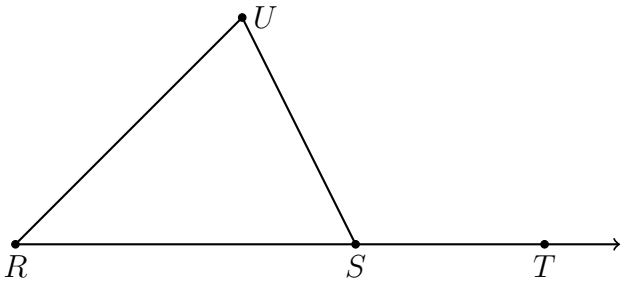
3. Given two vertical angles, as shown, with $m\angle 1 = 5x + 5$, $m\angle 2 = 7x - 17$. Find the measure of $\angle 2$.



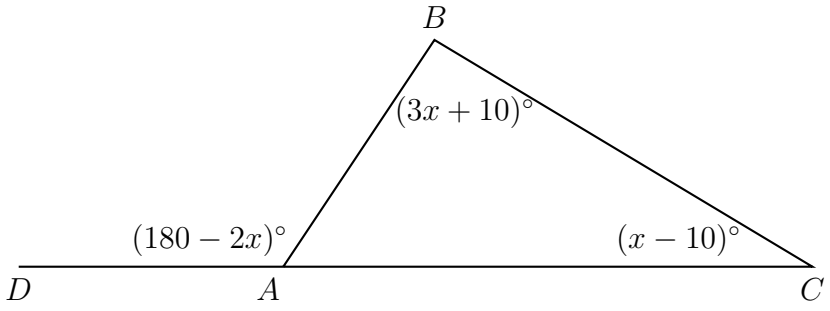
4. Given $\overrightarrow{BA} \perp \overrightarrow{BC}$, $m\angle ABD = 5x + 47$, and $m\angle DBC = 2x + 22$. Find $m\angle DBC$.



5. Given $m\angle R = 53°$ and $m\angle UST = 117°$. Find $m\angle U$.

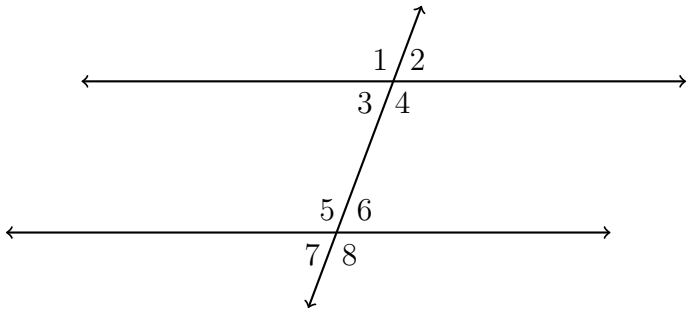


6. In $\triangle ABC$ shown below, side $\overline{AC}$ is extended to point D with $m\angle DAB = (180 - 2x)°$, $m\angle C = (x - 10)°$, and $m\angle B = (3x + 10)°$.



What is $m\angle BAC$?

7. Given two parallel lines and a transversal, as shown below.



(a) State the angle corresponding with $\angle 6$.

(b) Given $m\angle 6 = 78°$ and $m\angle 4 = 3x°$. Find x.

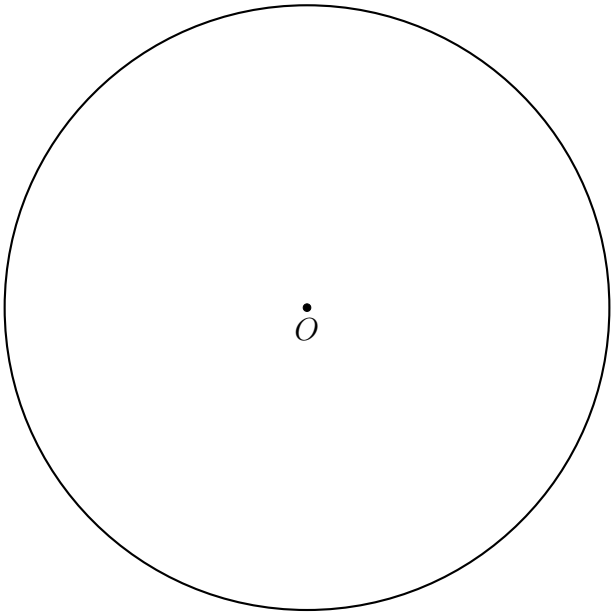
(c) In a proof, what reason would justify $\angle 4 \cong \angle 5$? _____

8. Given $\triangle JKL \sim \triangle MNO$. $m\angle J = 43°$ and $m\angle L = 92°$.
Find the measure of $\angle N$.

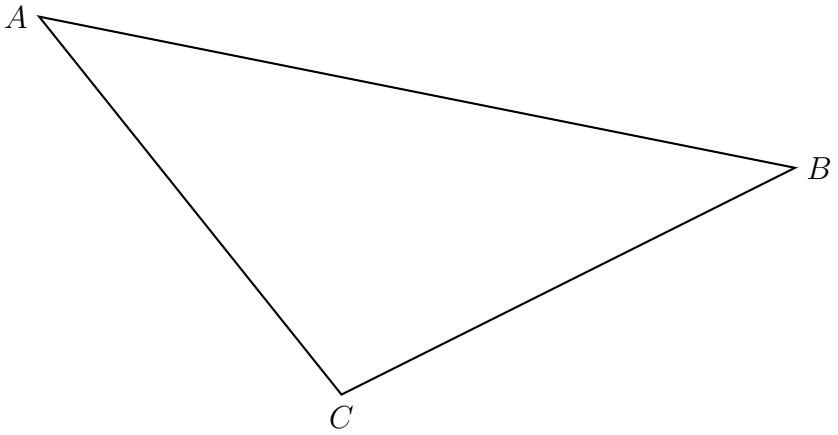
13.6 Exit Note Quiz: Angle relationships

Use only a compass and straightedge for these classical constructions, showing all construction marks.

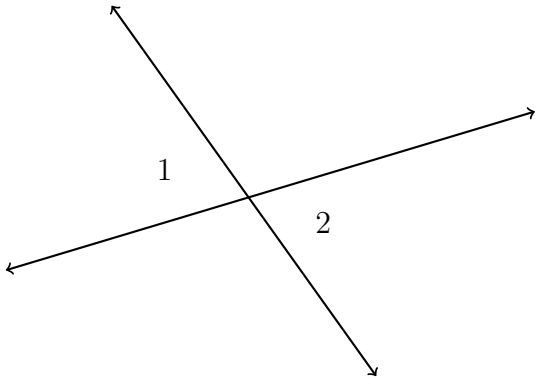
1. With a compass and straightedge, construct a hexagon inscribed in circle O.



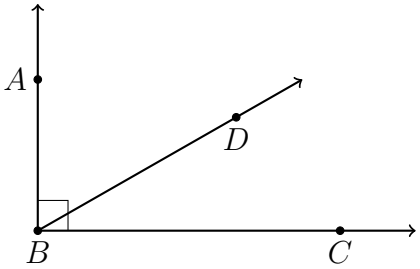
2. Using a compass and straightedge, construct the median from vertex A to the midpoint of $\overline{BC}$ in $\triangle ABC$ below.



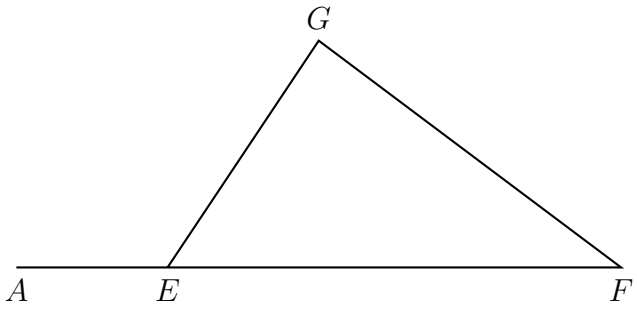
3. Given two vertical angles, as shown, with $m\angle 1 = 5x + 5$, $m\angle 2 = 3x + 35$. Find the measure of $\angle 1$.



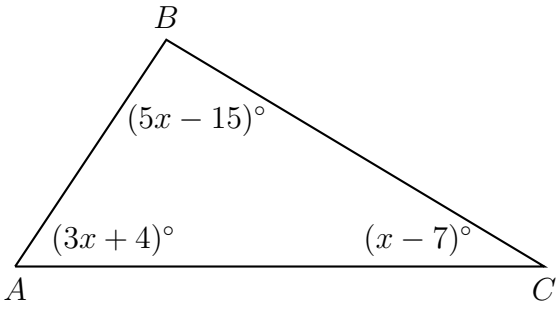
4. Given $\overrightarrow{BA} \perp \overrightarrow{BC}$, $m\angle ABD = 4x + 15$, and $m\angle DBC = x + 25$. Find $m\angle DBC$.



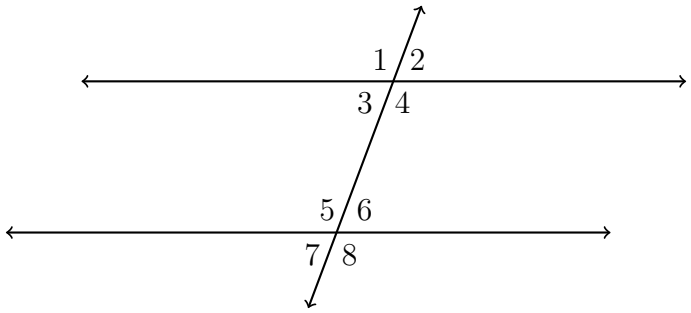
5. Given $\triangle EFG$ with $\overline{EF}$ extended to A. If $m\angle F = 40°$ and $m\angle AEG = 130°$, what is $m\angle EGF$?



6. In $\triangle ABC$ shown below, $m\angle A = (3x + 4)°$, $m\angle B = (5x - 15)°$, and $m\angle C = (x - 7)°$. What is $m\angle A$?



7. Given two parallel lines and a transversal, as shown below.



(a) State the angle corresponding with $\angle 5$.

(b) Given $m\angle 3 = 80°$ and $m\angle 5 = 5x°$. Find x.

(c) In a proof, what reason would justify $\angle 3 \cong \angle 6$? _____

8. Given $\triangle JKL \sim \triangle MNO$. $m\angle J = 45°$ and $m\angle L = 90°$.
Find the measure of $\angle N$.