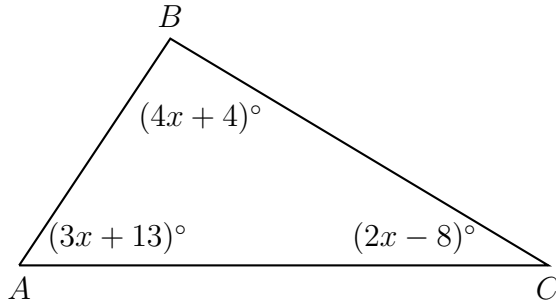


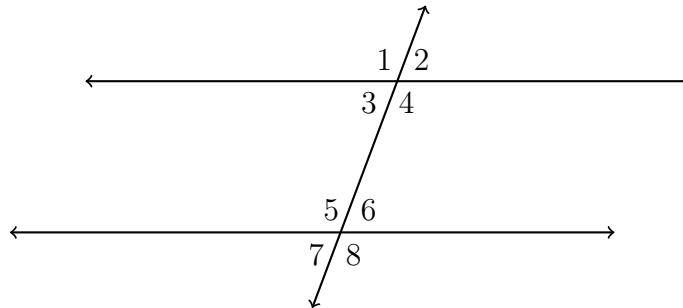
Name: _____

Part 1, Transformational Geometry: Similarity & Congruence

1. In $\triangle ABC$ shown below, $m\angle A = (3x + 13)^\circ$, $m\angle B = (4x + 4)^\circ$, and $m\angle C = (2x - 8)^\circ$.
What is $m\angle A$?



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

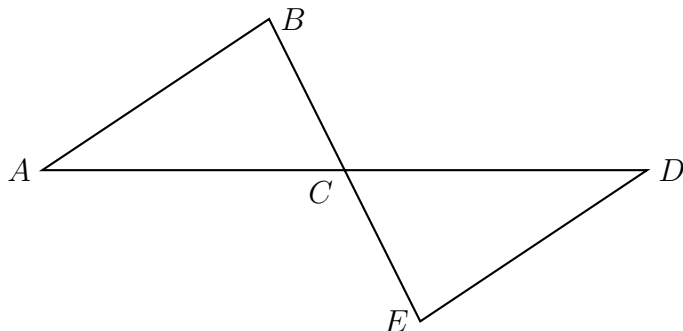


- (a) State the angle corresponding with $\angle 6$.

- (b) Given $m\angle 3 = 73^\circ$ and $m\angle 5 = (3x - 1)^\circ$. Find x .

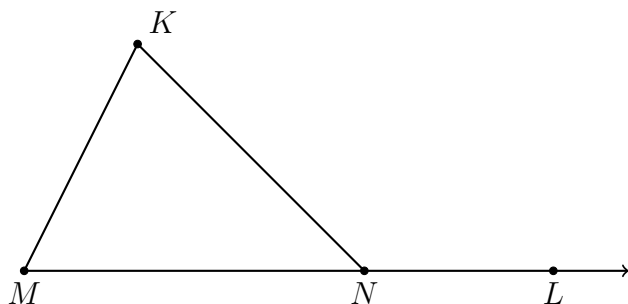
- (c) In a proof, what reason would justify $m\angle 5 + m\angle 6 = 180^\circ$? _____

3. Given $\triangle ABC$ and $\triangle DEC$ with $\angle B \cong \angle E$. C is the midpoint of \overline{AD} .
 Prove $\triangle ABC \cong \triangle DEC$.



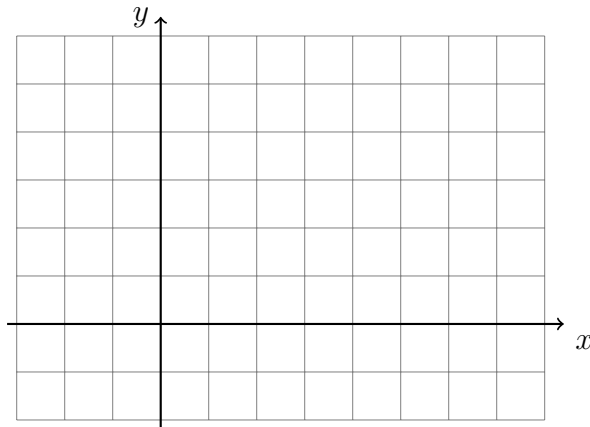
<u>Statement</u>	<u>Reason</u>
1) _____	1) Given
2) _____	2) Given
3) _____	3) Given
4) $\angle BCA \cong \angle ECD$	4) _____
5) _____	5) Definition of a midpoint
6) $\triangle ABC \cong \triangle DEC$	6) _____

4. Given $\overline{KN} \cong \overline{MN}$ and $m\angle KNL = 108^\circ$. Find $m\angle M$.



Name:

5. On the graph below, draw \overline{AB} , with $A(-1, -1)$ and $B(7, 1)$, labeling the end points. Determine and state the coordinates of the midpoint M of \overline{AB} and mark and label it on the graph.



6. Express the result to *the nearest thousandth*.

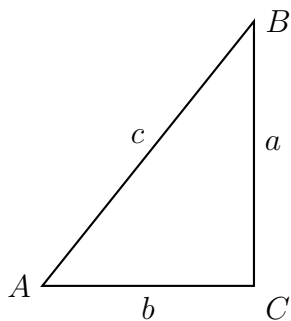
(a) $\sin 42^\circ =$

(c) $\cos 48^\circ =$

(b) $\cos 19^\circ =$

(d) $\sin 71^\circ =$

7. $\triangle ABC$ is shown with $m\angle C = 90^\circ$. The lengths of the triangle's sides are a , b , and c . Express each trigonometric ratio as a fraction of two variables.



(a) $\sin B =$

(b) $\cos A =$

- (c) Explain why $\angle A$ and $\angle B$ are complementary.