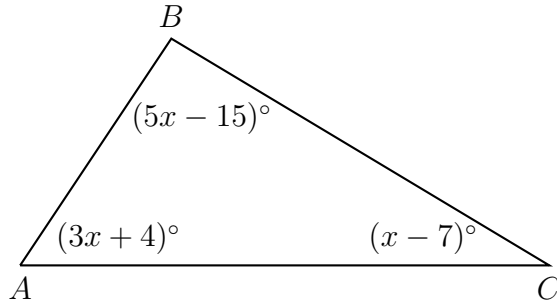


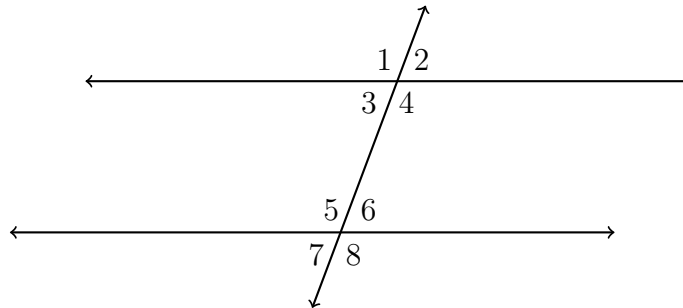
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Homework: Triangles, transversals, proof

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



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

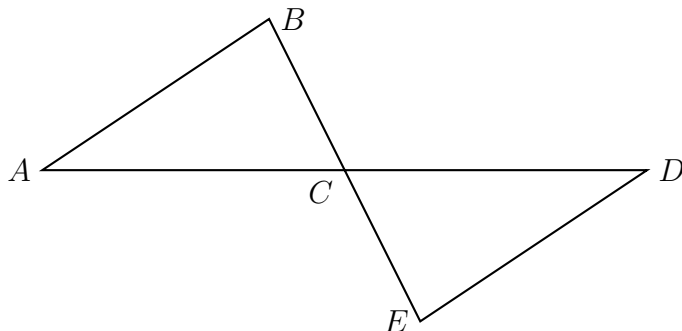


(a) State the angle corresponding with $\angle 5$.

(b) Given $m\angle 3 = 78^\circ$ and $m\angle 5 = 3x^\circ$. Find x .

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

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

StatementReason

1) _____

1) Given

2) _____

2) Given

3) _____

3) Given

4) $\angle BCA \cong \angle ECD$

4) _____

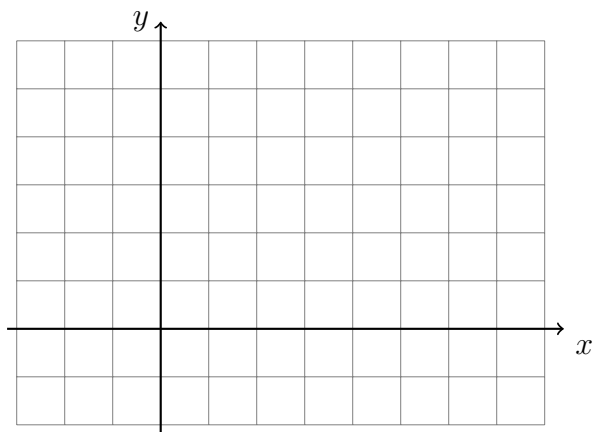
5) _____

5) Definition of a midpoint

6) $\triangle ABC \cong \triangle DEC$

6) _____

4. On the graph below, draw \overline{AB} , with $A(-2, 1)$ and $B(6, 3)$, labeling the end points. Determine and state the coordinates of the midpoint M of \overline{AB} and mark and label it on the graph.



Name:

5. $A(3, 1)$ is one endpoint of \overline{AB} . The segment's midpoint is $M(7, 6)$. Find the other endpoint, B .

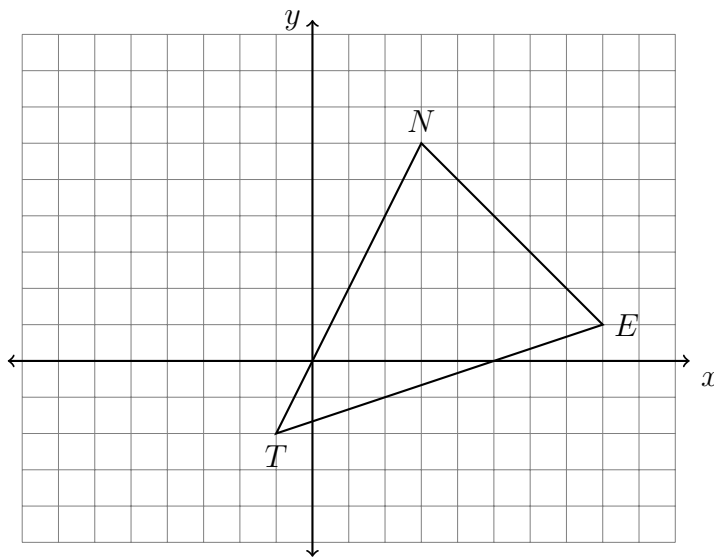
6. Apply the translation $(x, y) \rightarrow (x - 2, y + 4)$ to the point $A(2, -1)$.

7. What is the image of $B(2, 7)$ under a reflection across the x -axis?

8. State the translation that would map $C(-3, 1)$ onto $C'(4, 0)$.

9. A translation maps $D(1, 9) \rightarrow D'(4, 3)$. What is the image of $E(6, -2)$ under the same translation?

10. Spicy: Triangle $\triangle TEN$ is graphed on the set of axes below. The vertices of $\triangle TEN$ have the coordinates $T(-1, -2)$, $E(8, 1)$, and $N(3, 6)$.



(a) Draw an altitude through point N perpendicular to \overline{TE} .

(b) What is the length of the altitude drawn through N ?

(c) What is the length of the base, TE ?

(d) Find the area of $\triangle TEN$.