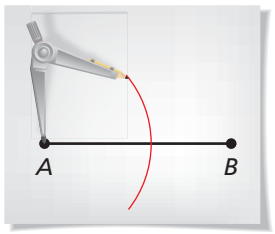
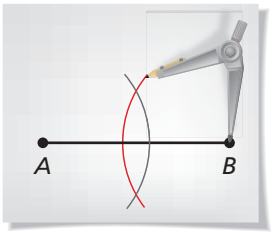
3 Cumulative Assessment

1. Use the steps in the construction to explain how you know that $\overleftrightarrow{CD}$ is the perpendicular bisector of $\overline{AB}$.

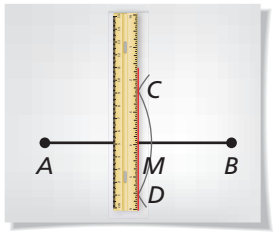
Step 1



Step 2



Step 3



2. The equation of a line is $x + 2y = 10$.

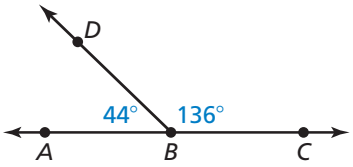
a. Use the numbers and symbols to create the equation of a line in slope-intercept form that passes through the point $(4, -5)$ and is parallel to the given line.

b. Use the numbers and symbols to create the equation of a line in slope-intercept form that passes through the point $(2, -1)$ and is perpendicular to the given line.

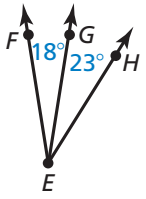
y	x	$=$	$+$	$-$	-9	-2	-1
$-\frac{1}{2}$	$\frac{1}{2}$	1	$\frac{3}{2}$	2	3	4	5

3. Classify each pair of angles whose measurements are given.

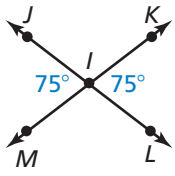
a.



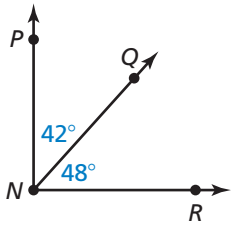
b.



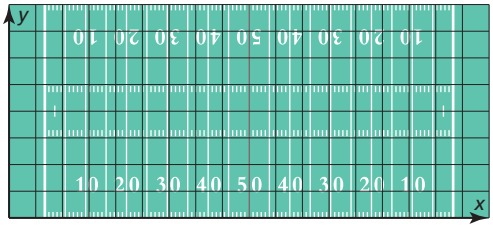
c.



d.



4. Your school is installing new turf on the football field. A coordinate plane has been superimposed on a diagram of the football field where 1 unit = 20 feet.

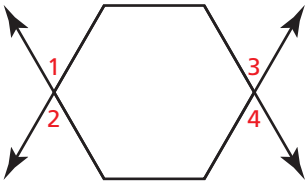


a. What is the length of the field?

b. What is the perimeter of the field?

c. Turf costs $2.69 per square foot. Your school has a $150,000 budget. Does the school have enough money to purchase new turf for the entire field?

5. Enter a statement or reason in each blank to complete the two-column proof.

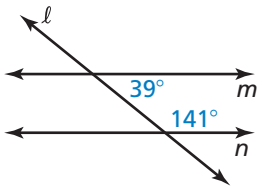


Given $\angle 1 \cong \angle 3$

Prove $\angle 2 \cong \angle 4$

STATEMENTS	REASONS
1. $\angle 1 \cong \angle 3$	**1.** Given
2. $\angle 1 \cong \angle 2$	**2.** _____
3. $\angle 2 \cong \angle 3$	**3.** _____
4. _____	**4.** Vertical Angles Congruence Theorem (Thm. 2.6)
5. $\angle 2 \cong \angle 4$	**5.** _____

6. Your friend claims that lines m and n are parallel. Do you support your friend's claim? Explain your reasoning.



7. Which of the following is true when $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are skew?

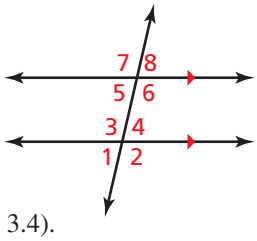
Ⓐ $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are parallel.

Ⓑ $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ intersect.

Ⓒ $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are perpendicular.

Ⓓ A, B, and C are noncollinear.

8. Select the angle that makes the statement true.



a. $\angle 4 \cong$ ___ by the Alternate Interior Angles Theorem (Thm. 3.2).

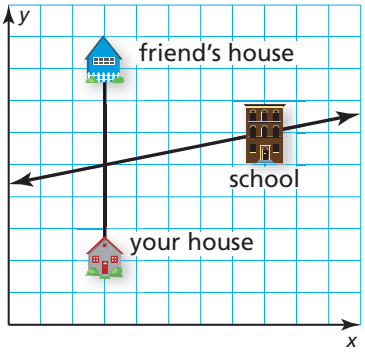
b. $\angle 2 \cong$ ___ by the Corresponding Angles Theorem (Thm. 3.1).

c. $\angle 1 \cong$ ___ by the Alternate Exterior Angles Theorem (Thm. 3.3).

d. $m\angle 6 + m$ _____ $= 180°$ by the Consecutive Interior Angles Theorem (Thm. 3.4).

$\angle 1$	$\angle 2$	$\angle 3$	$\angle 4$	$\angle 5$	$\angle 6$	$\angle 7$	$\angle 8$

9. You and your friend walk to school together every day. You meet at the halfway point between your houses first and then walk to school. Each unit in the coordinate plane corresponds to 50 yards.



a. What are the coordinates of the midpoint of the line segment joining the two houses?

b. What is the distance that the two of you walk together?