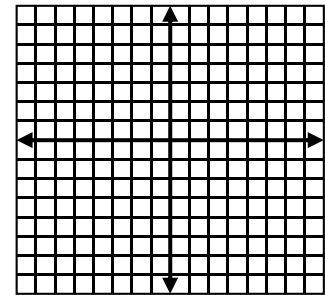


1. A square has a perimeter of 160 inches. Find the area of the square.
2. Given:  $A(1, 3)$   $B(5, -3)$  and  $C(1, -3)$  are three points in a plane. Find:
  - a. Slope of  $\overleftrightarrow{AB}$

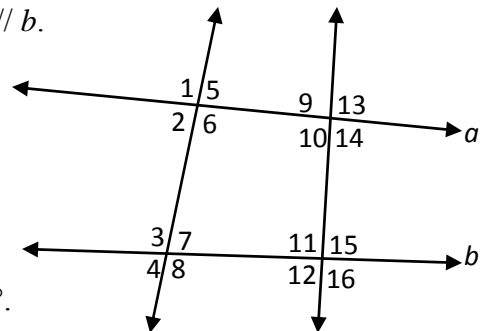


- b. Equation of a line parallel to  $\overleftrightarrow{AB}$
- c. Coordinates of the midpoint of  $\overleftrightarrow{AB}$
- d. Length of  $\overleftrightarrow{AB}$  ( $AB$ )
- e. What is the equation of  $\overleftrightarrow{AB}$  in point-slope form. (Point-slope form is  $y - y_1 = m(x - x_1)$  )
- f. Equation of  $\overleftrightarrow{AB}$  in slope-intercept form.
- g. Equation of **perpendicular bisector** of  $\overleftrightarrow{AB}$  in slope-intercept form.
- h. Find the perimeter of  $\triangle ABC$ .
- i. Find the area of  $\triangle ABC$ .

3. Identify the following pairs of angles as corresponding, vertical, alternate interior, alternate exterior, or same side interior. If no relationship, write none. Use the diagram below.
  - a.  $\angle 2$  and  $\angle 7$
  - b.  $\angle 10$  and  $\angle 12$
  - c.  $\angle 2$  and  $\angle 3$

4. Use the figure to the right to answer these questions. Assume  $a \parallel b$ .

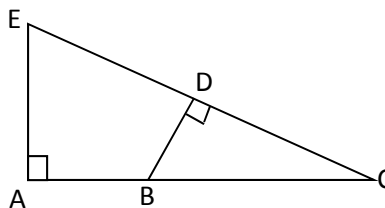
- a. If  $\angle 7 = \angle 8$ , then  $\angle 6 =$  \_\_\_\_\_  $^\circ$ .
- b. If  $\angle 2 = 58^\circ$ , then  $\angle 4 =$  \_\_\_\_\_  $^\circ$ .
- c. If  $\angle 6 = 11x$  and  $\angle 8 = 12x - 4$ , then  $x =$  \_\_\_\_\_  $^\circ$ .
- d. If  $\angle 4 = 19x + 1$  and  $\angle 5 = 15x + 13$ , then  $m\angle 4 =$  \_\_\_\_\_  $^\circ$ .



Fill in all of the missing parts for the following proofs.

5. Given:  $CA \perp AE$ ,  $BD \perp EC$

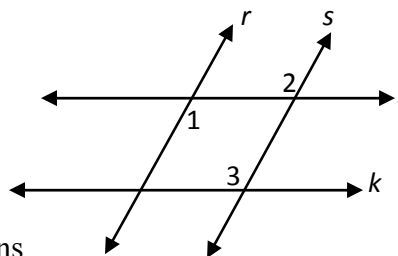
Prove:  $\frac{BC}{CE} = \frac{BD}{AE}$



| Statements                         | Reasons                               |
|------------------------------------|---------------------------------------|
| 1.                                 | 1. Given                              |
| 2.                                 | 2. Definition of perpendicular lines. |
| 3.                                 | 3. All right angles are congruent.    |
| 4.                                 | 4. Reflexive property                 |
| 5.                                 | 5. Angle-Angle Similarity Postulate   |
| 6. $\frac{BC}{CE} = \frac{BD}{AE}$ | 6.                                    |

6. Given:  $j \parallel k$  and  $m\angle 1 = m\angle 3$

Prove:  $r \parallel s$



| Statements                                     | Reasons |
|--|---------|
| 1. $j \parallel k$ and $m\angle 1 = m\angle 3$ | 1.      |
| 2. $m\angle 2 = m\angle 3$                     | 2.      |
| 3. $m\angle 1 = m\angle 2$                     | 3.      |
| 4. $r \parallel s$                             | 4.      |