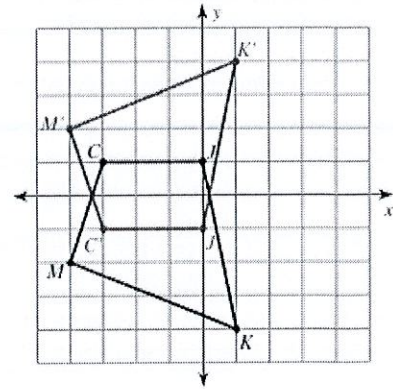
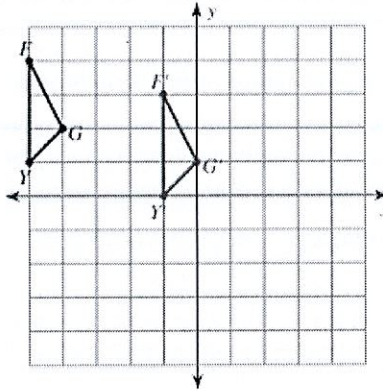
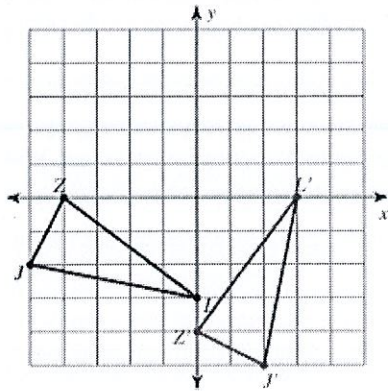
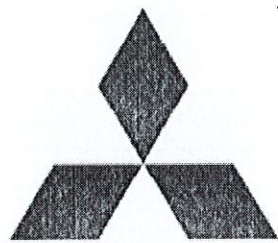


Look at the following transformations and determine what transformation occurred from pre-image to image.



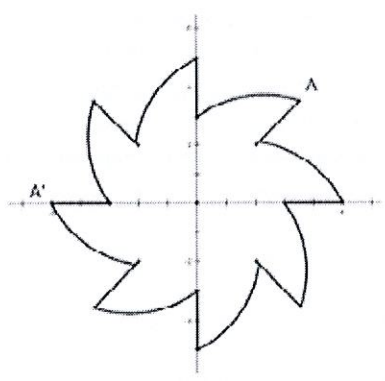
1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4. Determine which rotations will map this figure to itself.



- i.  $45^\circ$
  - ii.  $60^\circ$
  - iii.  $120^\circ$
  - iv.  $180^\circ$
- a. ii only
  - b. ii and iii
  - c. ii, iii, and iv
  - d. iii and iv

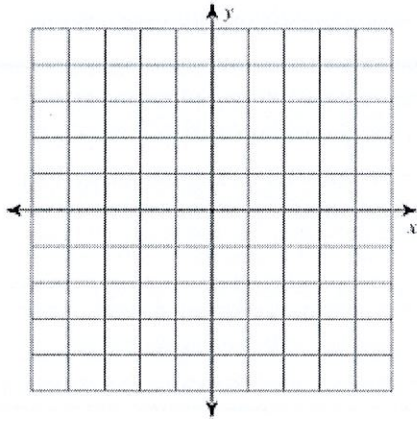
5. Determine the angle of rotation for A to map onto A'.



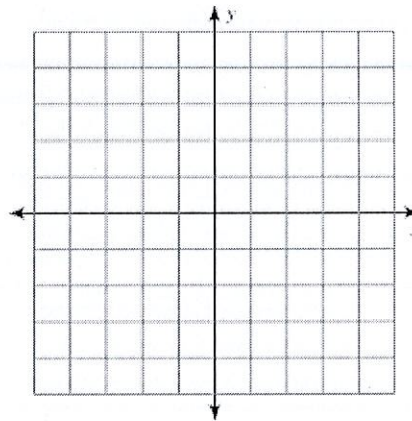


Graph the image of the figure using the transformation given.

6. rotation  $90^\circ$  clockwise about the origin  
 $B(-2, 0)$ ,  $C(-4, 3)$ ,  $Z(-3, 4)$ ,  $X(-1, 4)$



7. reflection across  $y = x$   
 $K(-5, -2)$ ,  $A(-4, 1)$ ,  $I(0, -1)$ ,  $J(-2, -4)$

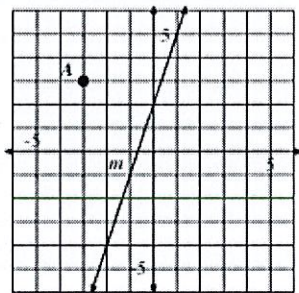


Find the coordinates of the vertices of each figure after the given transformation.

8. rotation  $180^\circ$  about the origin  
 $E(2, -2)$ ,  $J(1, 2)$ ,  $R(3, 3)$ ,  $S(5, 2)$

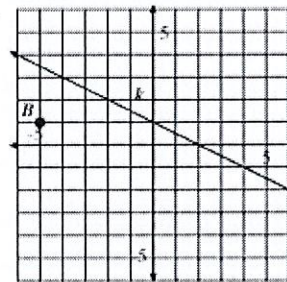
9. reflection across  $y = 2$   
 $J(1, 3)$ ,  $U(0, 5)$ ,  $R(1, 5)$ ,  $C(3, 2)$

10.



Reflect point  $A$  over line  $m$  and label the image  $A'$

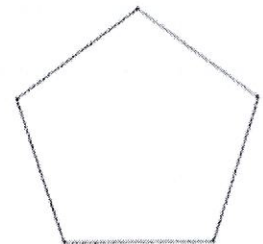
11.



Reflect point  $B$  over line  $k$  and label the image  $B'$

For questions 12 – 14, use the regular pentagon to the right.

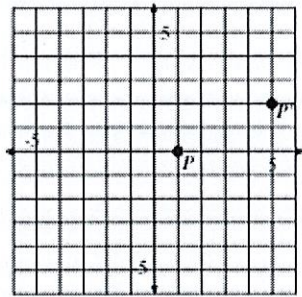
12. List all the angles of rotation up to  $360^\circ$  that will carry the figure onto itself.
13. On the octagon, draw the diagonals.
14. How many lines of reflection (symmetry) are there?



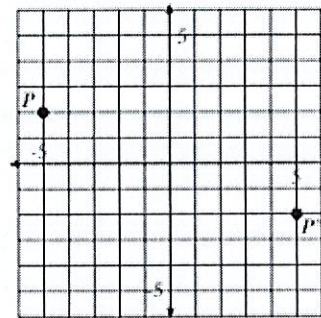


For each pair of point,  $P$  and  $P'$  draw in the line of reflection that would need to be used to reflect  $P$  onto  $P'$ . Then find the equation of the line of reflection.

15.



16.



For each linear equation write the slope of a line parallel to the given line.

17.  $y = -3x + 5$

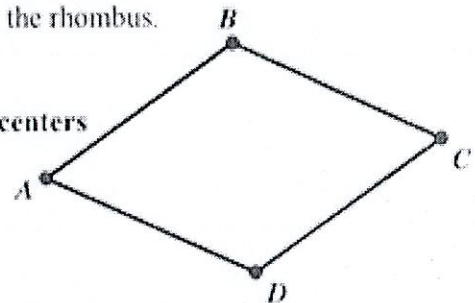
For each linear equation write the slope of a line perpendicular to the given line.

18.  $y = -\frac{2}{7}x + 5$

For questions 19-21 use the rhombus.

19. Draw and label the lines of symmetry and the diagonals on the rhombus.

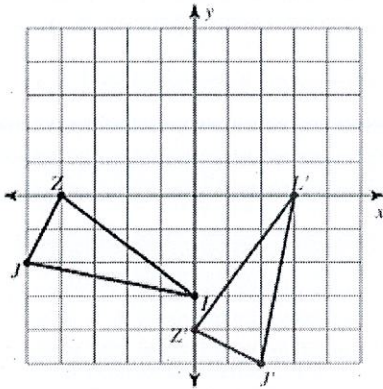
20. Using transformations, justify why  $\angle B \cong \angle D$  (Be specific, reflections are defined by lines, rotations are defined by centers and degrees of rotation)



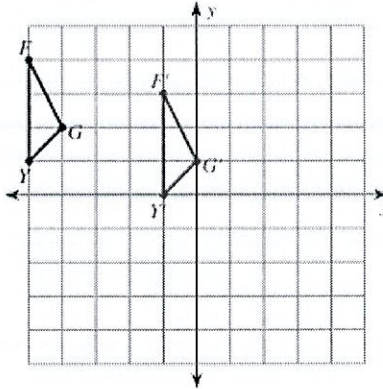
21. Using transformations, justify why  $\overline{BC} \cong \overline{DC}$  (Be specific, reflections are defined by lines, rotations are defined by centers and degrees of rotation)



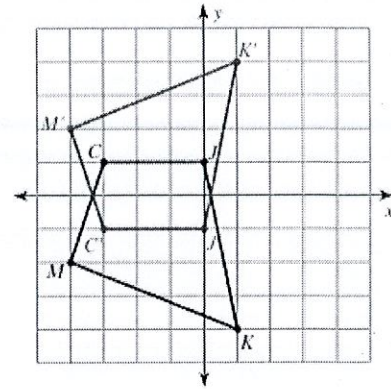
Look at the following transformations and determine what transformation occurred from pre-image to image.



1. Rotation 90° CCW or 270° CW

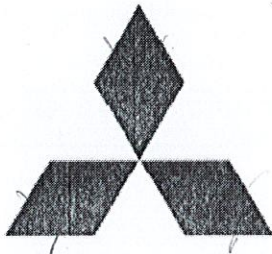


2. translate down one right 4 or  $(x+4, y-1)$



3. reflection over x-axis

4. Determine which rotations will map this figure to itself.



- i. 45°
- ii. 60°
- iii. 120°
- iv. 180°

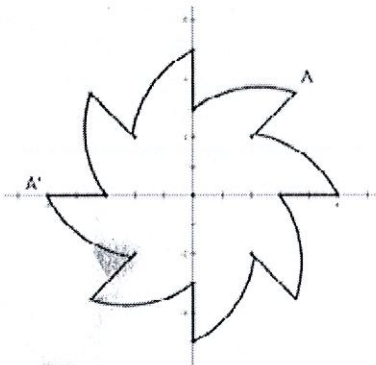
- a. ii only
- b. ii and iii

- c. ii, iii, and iv
- d. iii and iv

$$\frac{360}{6} = 60$$

60, 120, 180, 240, 300, 360

5. Determine the angle of rotation for A to map onto A'.



$$\frac{360}{8} = 45^\circ$$



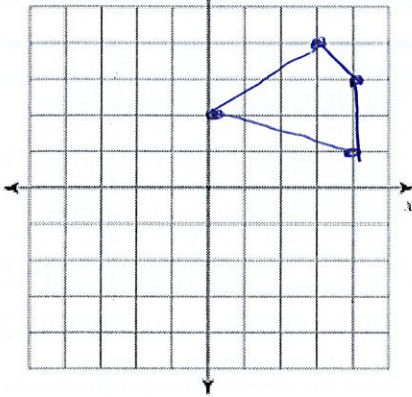


Graph the image of the figure using the transformation given.

$y = -x$

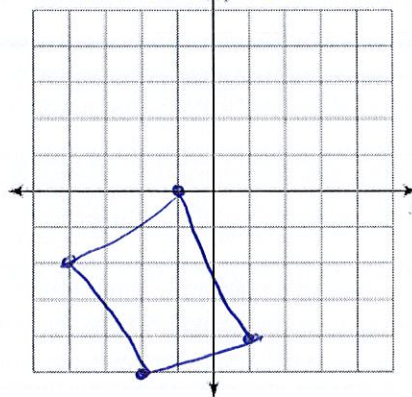
6. rotation  $90^\circ$  clockwise about the origin

$B(-2, 0), C(-4, 3), Z(-3, 4), X(-1, 4)$   
 $(0, 2) (3, 4) (4, 3) (4, 1)$



7. reflection across  $y = x$

$K(-5, -2), A(-4, 1), J(0, -1), L(-2, -4)$   
 $(-2, -5) (1, -4) (-1, 0) (-4, -2)$



Find the coordinates of the vertices of each figure after the given transformation.

8. rotation  $180^\circ$  about the origin

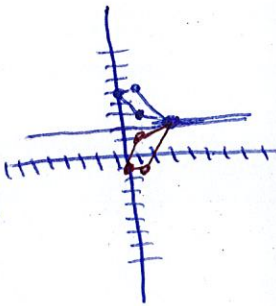
$E(2, -2), J(1, 2), R(3, 3), S(5, 2)$

$(-2, 2) (-1, -2) (-3, -3) (-5, -2)$

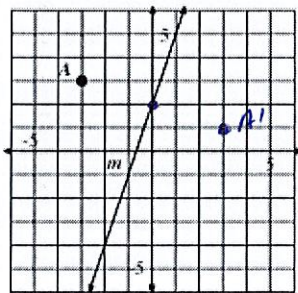
9. reflection across  $y = 2$

$J(1, 3), U(0, 5), R(1, 5), C(3, 2)$

$(1, 1) (0, -1) (1, -1) (3, 2)$

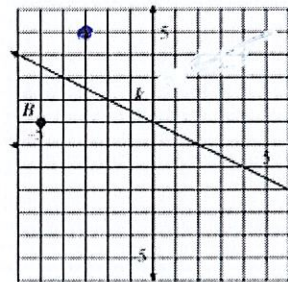


10.



Reflect point  $A$  over line  $m$  and label the image  $A'$

11.



Reflect point  $B$  over line  $k$  and label the image  $B'$

For questions 12 – 14, use the regular pentagon to the right.

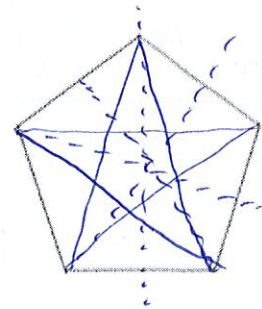
12. List all the angles of rotation up to  $360^\circ$  that will carry the figure onto itself.

$360/5 = 72^\circ$   $(4 \times 72^\circ)$   $216^\circ$   $288^\circ$   $360^\circ$

13. On the ~~octagon~~ pentagon, draw the diagonals.

14. How many lines of reflection (symmetry) are there?

5



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

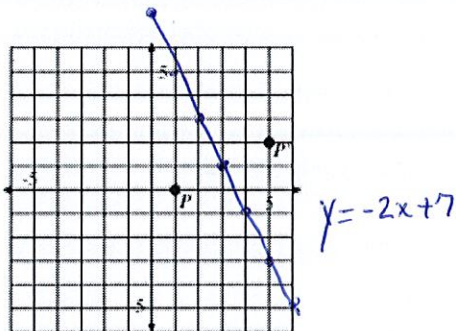
In the second section, the author details the various methods used to collect and analyze the data. This includes both manual and automated processes. The goal is to ensure that the information is both reliable and up-to-date.

The third part of the document focuses on the results of the analysis. It shows a clear upward trend in the data over the period covered. This indicates that the current strategy is effective and that there is significant potential for further growth.

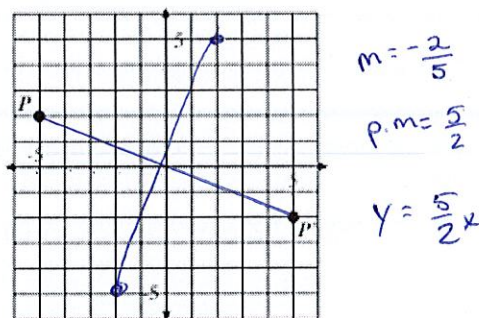
Finally, the document concludes with a series of recommendations for future actions. These include expanding the current operations into new markets and investing in research and development to stay ahead of the competition.

For each pair of point,  $P$  and  $P'$  draw in the line of reflection that would need to be used to reflect  $P$  onto  $P'$ . Then find the equation of the line of reflection.

15.



16.



For each linear equation write the slope of a line parallel to the given line.

17.  $y = -3x + 5$

$y = -3x - 5$

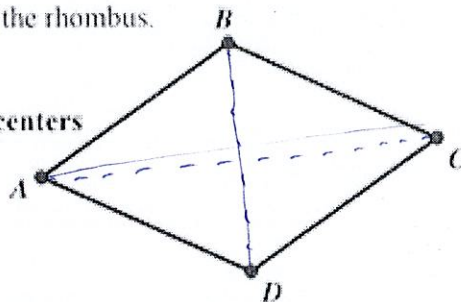
For each linear equation write the slope of a line perpendicular to the given line.

18.  $y = -\frac{2}{7}x + 5$

$y = \frac{7}{2}x + 5$

For questions 19-21 use the rhombus.

19. Draw and label the lines of symmetry and the diagonals on the rhombus.



20. Using transformations, justify why  $\angle B \cong \angle D$  (Be specific, reflections are defined by lines, rotations are defined by centers and degrees of rotation)

When making  $180^\circ$  rotation,  $\angle B$  will reflect onto  $\angle D$ , and be equal

21. Using transformations, justify why  $\overline{BC} \cong \overline{DC}$  (Be specific, reflections are defined by lines, rotations are defined by centers and degrees of rotation)

When making  $180^\circ$  rotation the segments will land onto of itself and be equal in length

