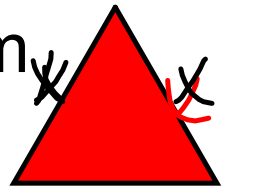
1) 10m + 1, m=3

2) 1/4 of 20 = 5 $10 \times 3 + 1$

3) (-1) + (+6)= -7 $30 + 1$

31

4) Find the x, perimeter = 28 cm



$2x + 14 = 28$

$2x + 14 - 14 = 28 - 14$

$\frac{2x}{2} = \frac{14}{2}$

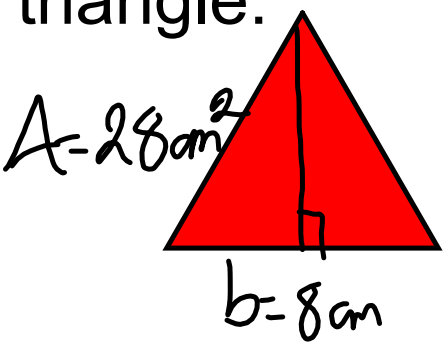
$x = 7$

5) What is the median of the data:
2,5,6,8,13,14 $6 + 8 = 14 \div 2 = 7$

6) Find the height of the triangle:

$28 \times 2 = 56$

$56 \div 8 = 7$



7) 19 X 20 = 380

8) 19 less than a number doubled

$2n - 19$

Shenker gives 10 CDs to his brother.

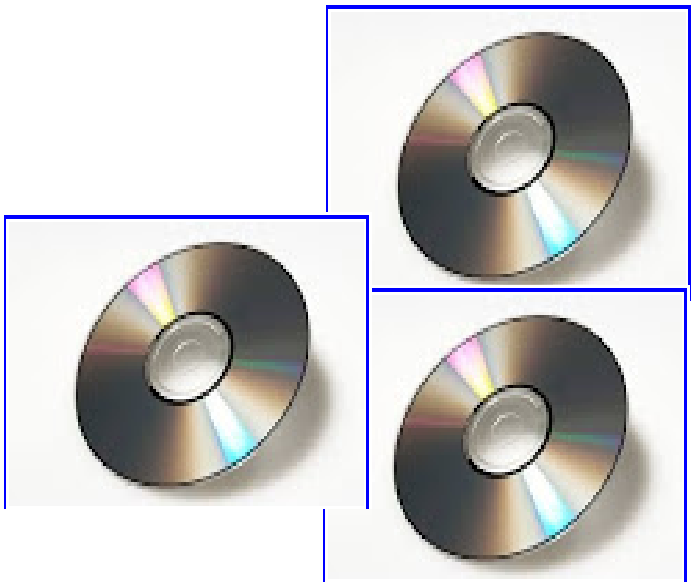
Shenker then has 35 CDs.

a) Write an equation you can solve to find how many CDs Shenker had to begin with.

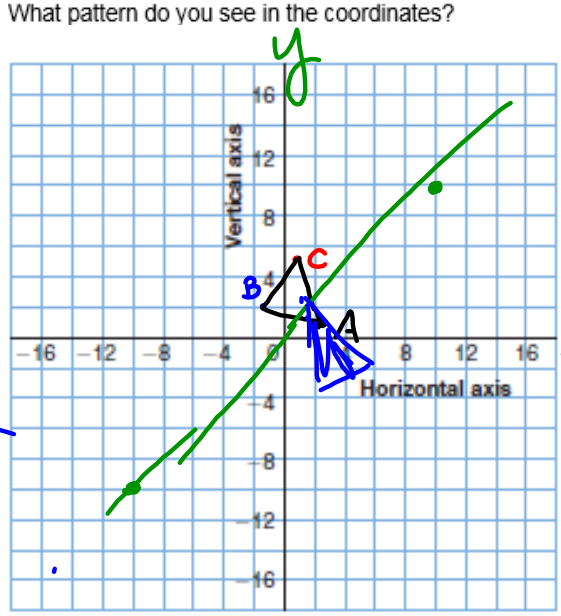
$n-10=35$

$n-10+10=35+10$

$n=45$



4. Plot these points on a coordinate grid: A(2, 1), B(–1, 2), C(1, 5).
a) Translate each point 3 units left and 4 units down to get image points A', B', C'.
b) Write the coordinates of each point and its translation image. What pattern do you see in the coordinates?



y

↔, ↕

x

Reflection line

B(-1, 2)
B'(1, -2)

7. Plot the points in question 4.
a) Reflect each point in the line through (–10, –10) and (10, 10) to get image points A', B', C'.
b) Write the coordinates of each point and its reflection image. What pattern do you see in the coordinates?

A'(1, 2)
B'(2, -1)
C'(5, 1)

A(-2, 1)

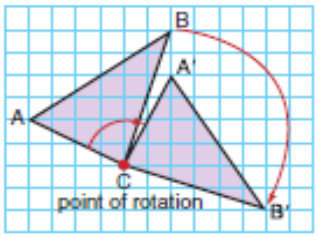
* When you reflect a shape in the x-axis → the ordered pairs switch!

8.7 Graphing Rotations

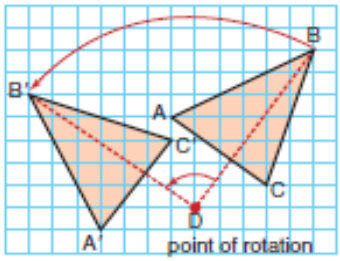
Focus Graph rotation images on a coordinate grid.

Recall that a rotation turns a shape about a point of rotation.
The rotation may be clockwise or counterclockwise.
The point of rotation may be:

On the shape



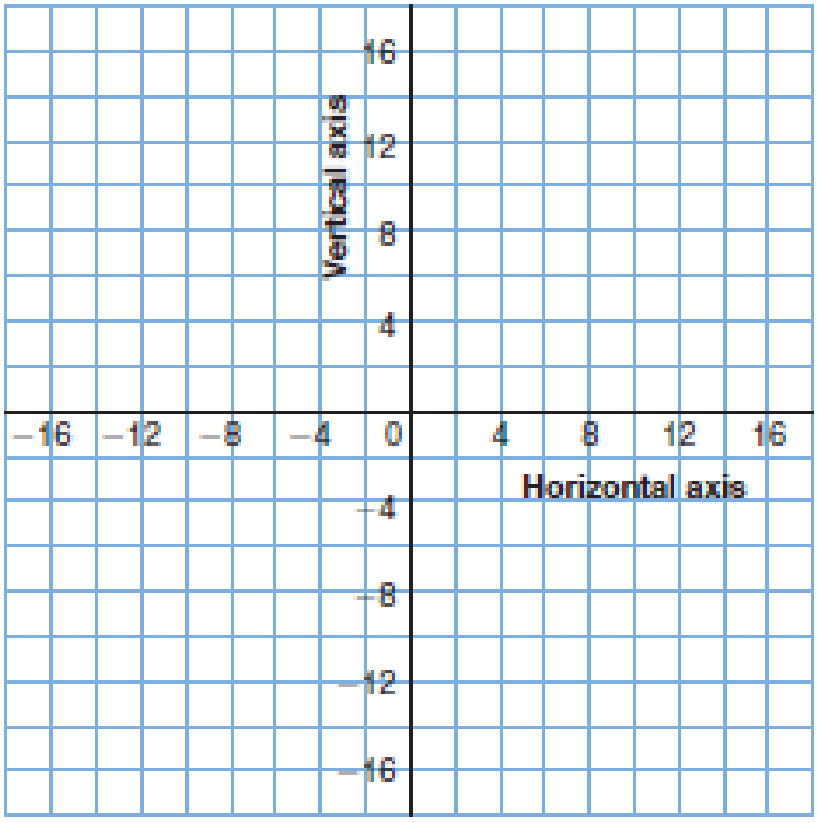
Off the shape



How would you describe each rotation?

Draw trapezoid A(0,-2) B(4,3) C(8,2) D(9,-5)

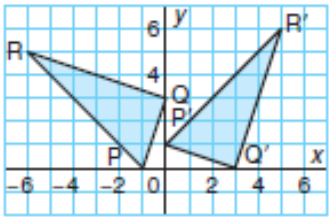
https://www.youtube.com/watch?v=Foe8VFKAB8Y



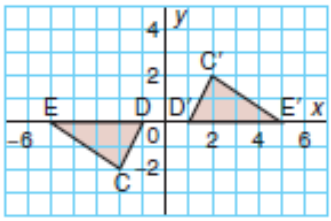
Practice

1. Each grid shows a shape and its rotation image.
Identify the angle and direction of rotation, and the point of rotation.

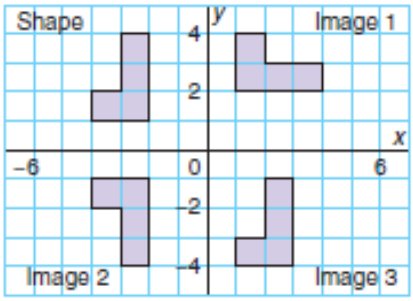
a)



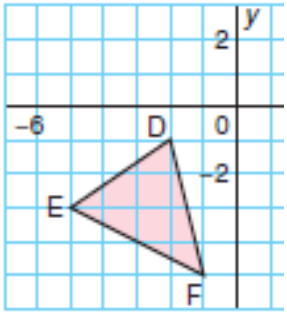
b)



2. Identify the transformation that moves the shape in Quadrant 2 to each image.
Explain how you know.



3. a) Copy △DEF on grid paper.
Write the coordinates of each vertex.
After each rotation:
- Write the coordinates of the image of each vertex.
- Describe the positional change of the vertices of the triangle.



b) Rotate △DEF −90° about the origin to its image △D′E′F′.

c) Rotate △DEF +270° about the origin to its image △D″E″F″.

d) What do you notice about the images in parts b and c?
Do you think you would get a similar result with any shape that you rotate −90° and +270°? Explain.

6. Assessment Focus

a) Plot these points on a coordinate grid:
A(6, 0), B(6, 2), C(5, 3), D(4, 2), E(2, 2), F(2, 0)
Join the points to draw polygon ABCDEF.

b) Translate the polygon 6 units left and 2 units up.
Write the coordinates of each vertex of the image polygon A′B′C′D′E′F′.

c) Rotate the image polygon A′B′C′D′E′F′ 90° counterclockwise about the origin.
Write the coordinates of each vertex of the image polygon A″B″C″D″E″F″.

d) How does polygon A″B″C″D″E″F″ compare with polygon ABCDEF?

8. a) Plot these points on a coordinate grid:
R(−1, −1), S(−1, 4), T(2, 4), U(2, −1)
Join the points to draw rectangle RSTU.

b) Choose a vertex to use as the point of rotation.
Rotate the rectangle 90° counterclockwise.

c) Repeat part b two more times for each image rectangle.

d) Describe the pattern you see in the rectangles.

e) Is there a transformation that moves rectangle RSTU to the final image directly? Explain.