Created by Mr. Lischwe

Warmup 1/$\left(\frac{22x^3}{x^3}\right)$

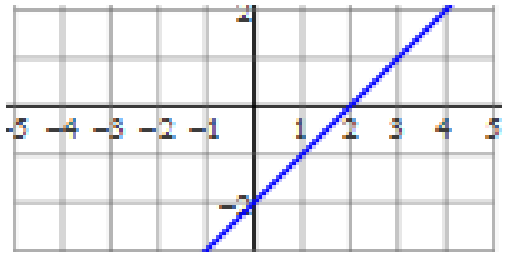
Find an explicit rule for this sequence:
1, 9, 17, 25…

NEED:
- **Ruler**
- **Protractor**
- **One sheet of Patty Paper**

Find the slope between the following points:
(-5,5),and (1,10)

Solve the equation.
$\frac{2}{3}(15 - 9x) = 29$

Write the equation of the line in slope intercept form.



Reflecting across the line y = -x

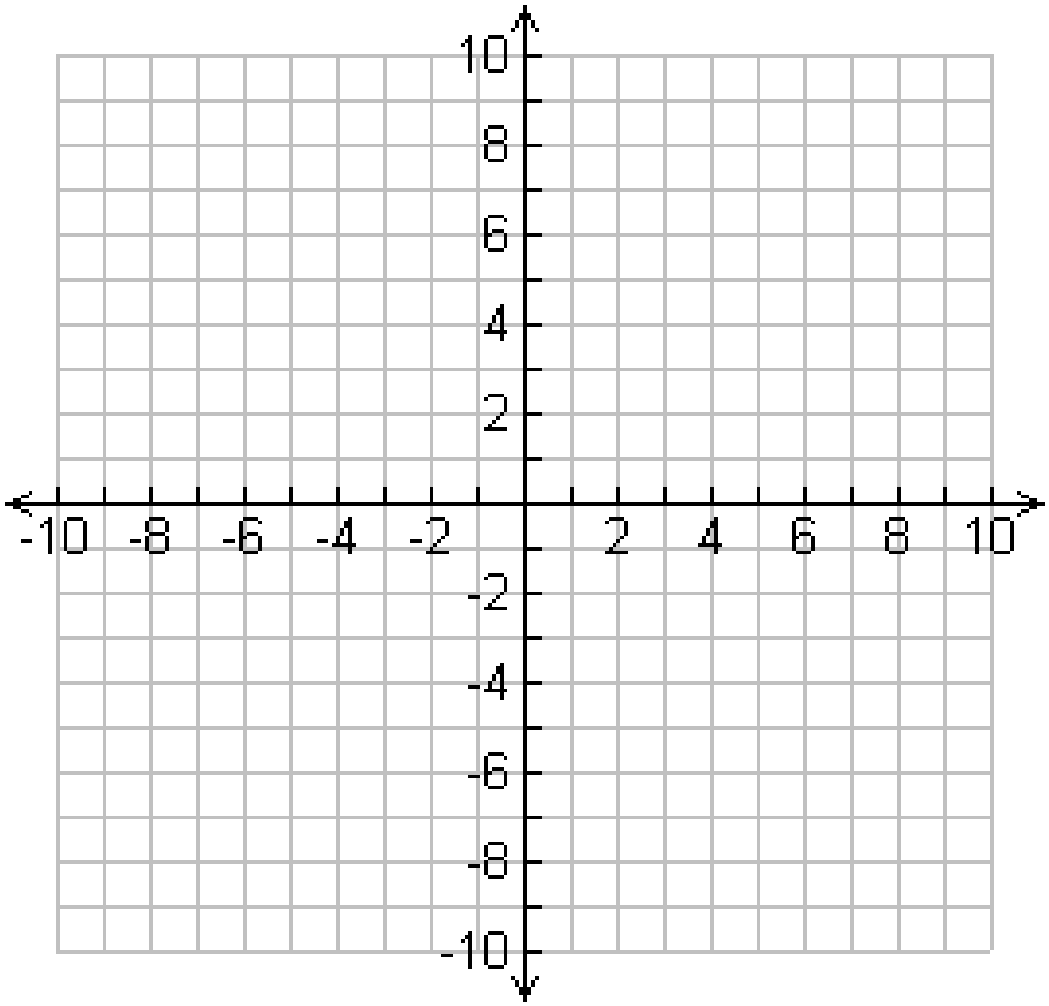
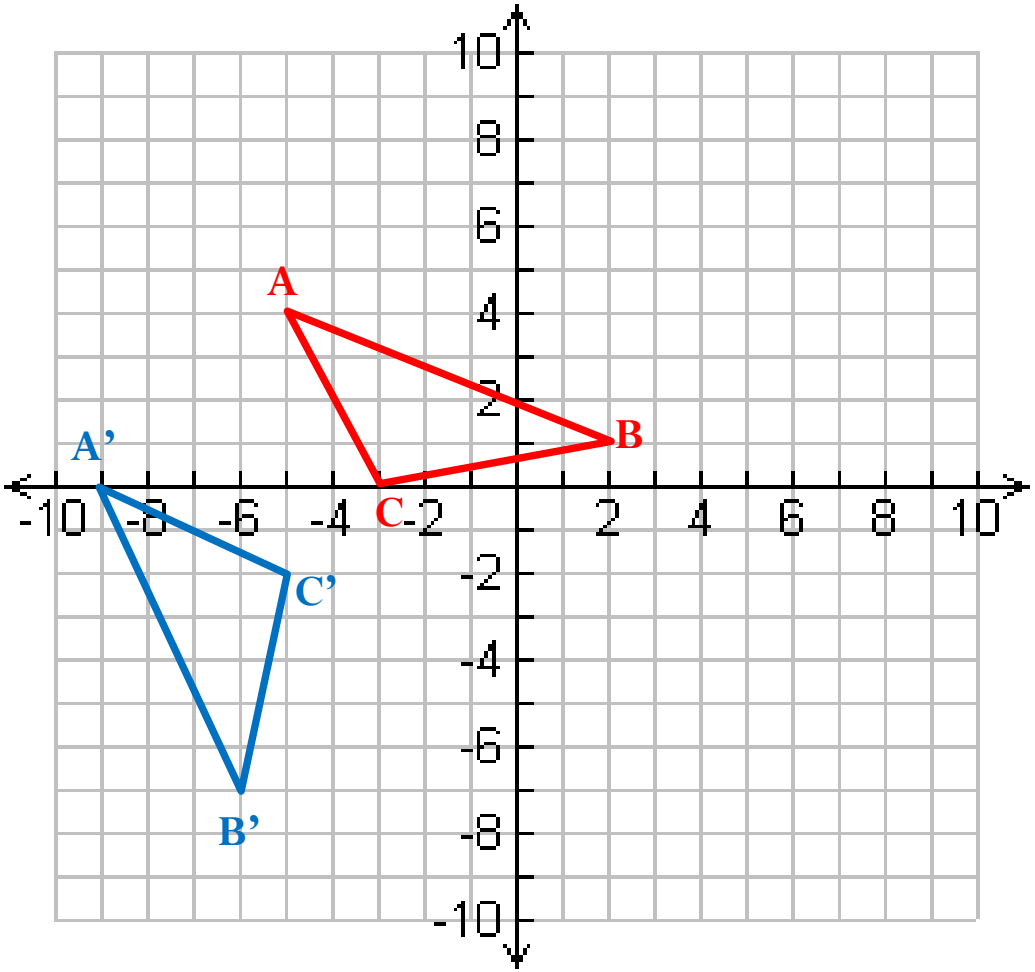


Chart on pg. 846

Rules for Reflections on a Coordinate Plane	
Reflection across the x-axis	$(x, y) \rightarrow (x, -y)$
Reflection across the y-axis	$(x, y) \rightarrow (-x, y)$
Reflection across the line $y = x$	$(x, y) \rightarrow (y, x)$
Reflection across the line $y = -x$	$(x, y) \rightarrow (-y, -x)$

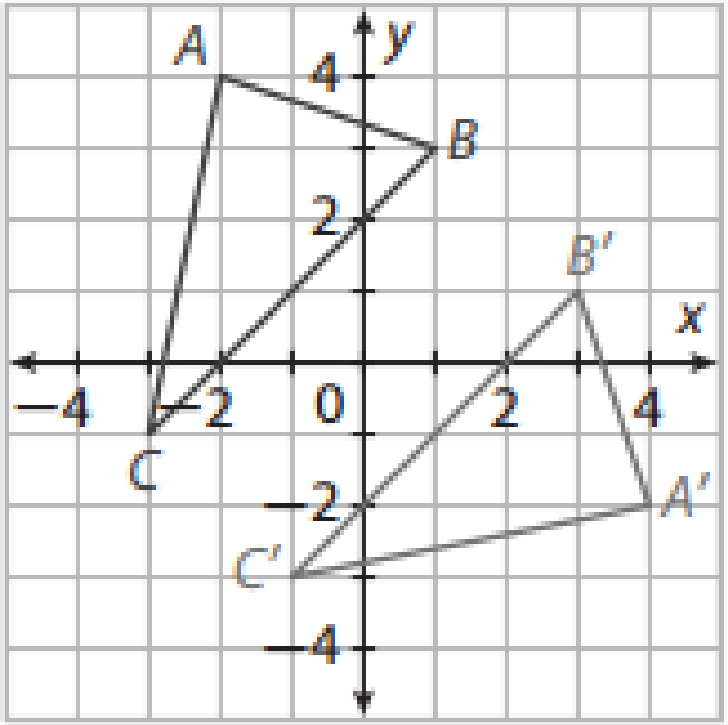
Finding the line of reflection

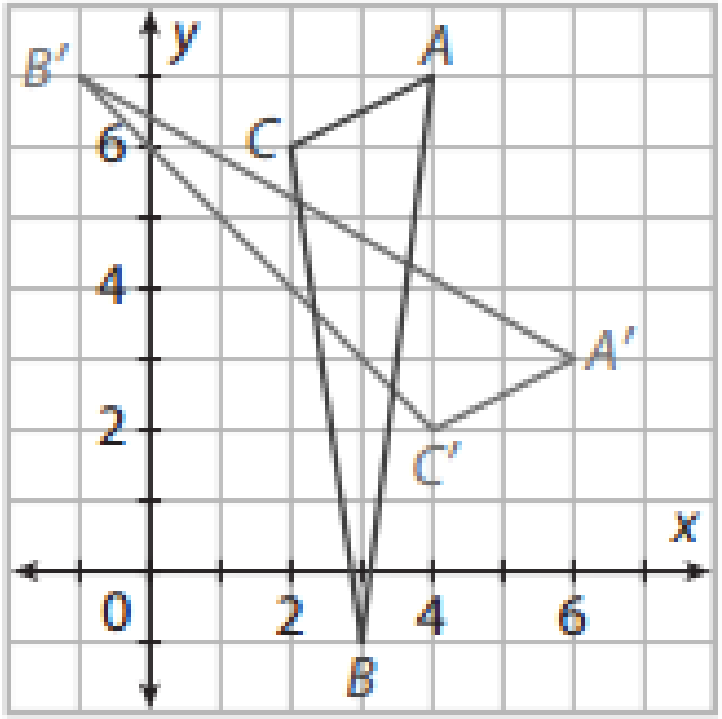
Who thinks they can draw it???

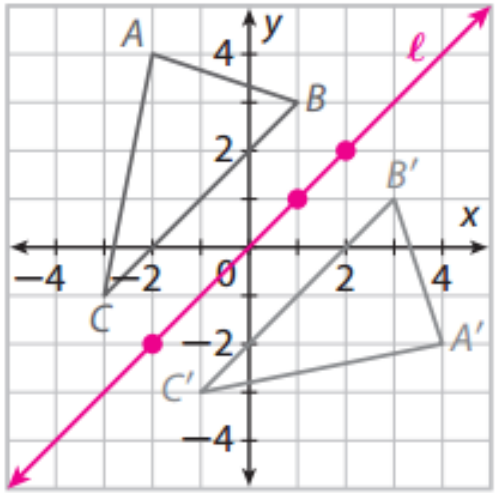


- To find the line of reflection, find the midpoint of each connecting line. Then connect these midpoints.

- You can always use the midpoint formula to find the midpoints (like in p. 847 Example A), but a lot of times you will be able to find the midpoint by counting squares.


A
y
4
B
2
B′
x
−4
−2
0
2
4
C
−2
A′
C′
−4

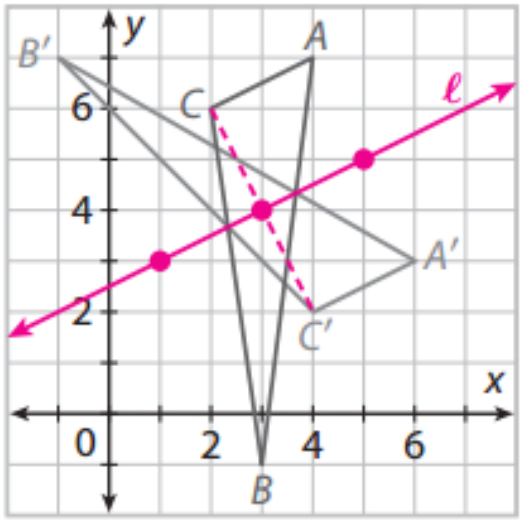

B′
y
A
6
C
4
A′
2
C′
x
0
2
4
6
B



midpoints: $\overline{AA'}$: $\left(\frac{-2+4}{2}, \frac{4+(-2)}{2}\right) = (1, 1)$;

$\overline{BB'}$: $\left(\frac{1+3}{2}, \frac{3+1}{2}\right) = (2, 2)$;

$\overline{CC'}$: $\left(\frac{-3+(-1)}{2}, \frac{-1+(-3)}{2}\right) = (-2, -2)$



midpoints: $\overline{AA'}$: $\left(\frac{4+6}{2}, \frac{7+3}{2}\right) = (5, 5)$;

$\overline{BB'}$: $\left(\frac{3+(-1)}{2}, \frac{-1+7}{2}\right) = (1, 3)$;

$\overline{CC'}$: $\left(\frac{2+4}{2}, \frac{6+2}{2}\right) = (3, 4)$

Please do 13 – 16 on the homework!!!

Rigid Motions

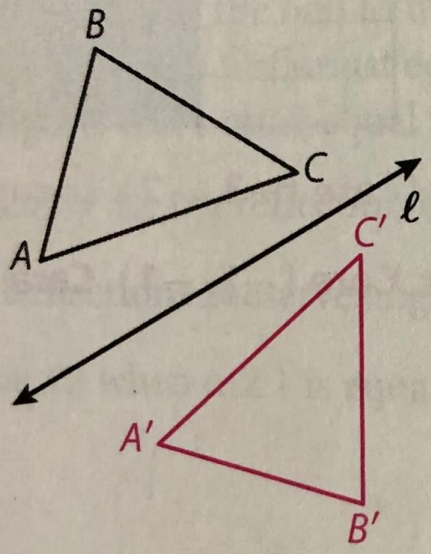
- Translations (last week)
- Reflections (Yesterday)
- Rotations (Today and tomorrow)

- *Quiz Friday*

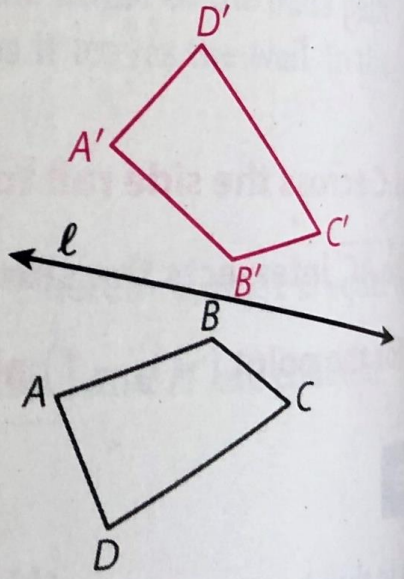
Check Homework

pg. 851 (1 – 16)

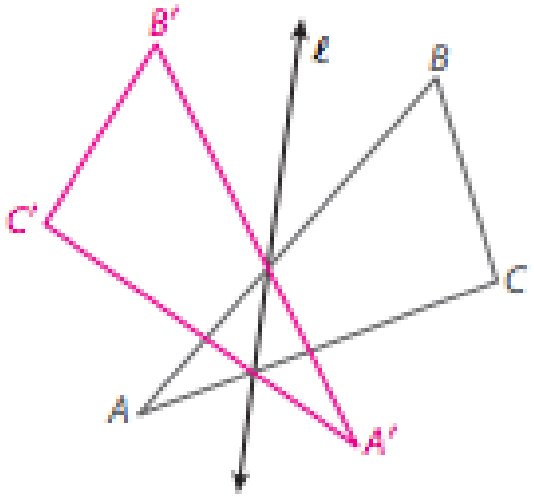
1.



2.



3.



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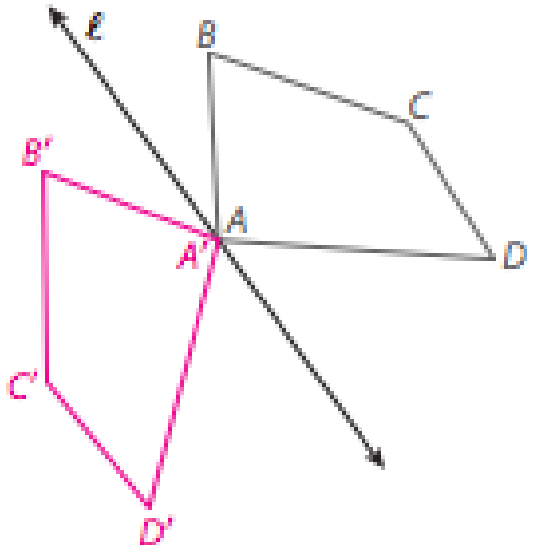
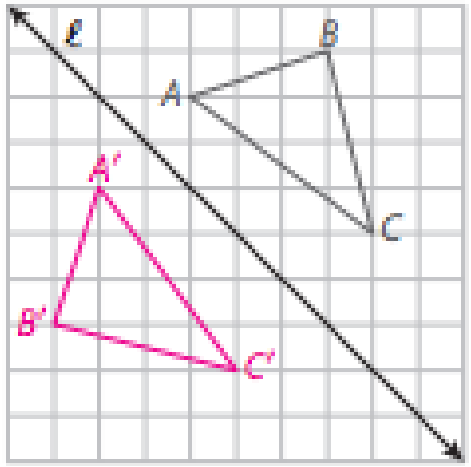
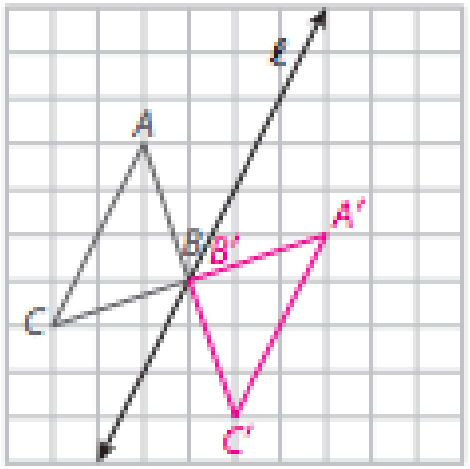


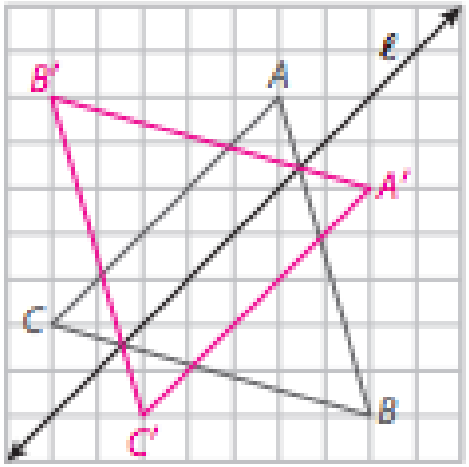
5.



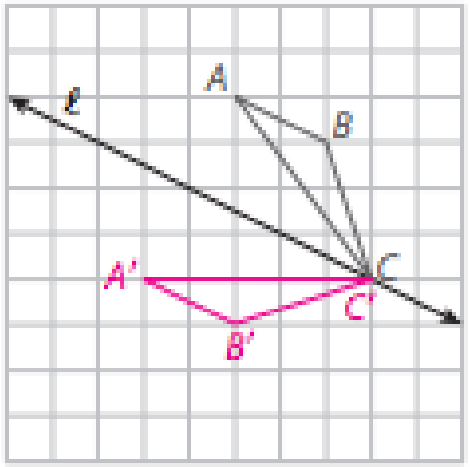
6.



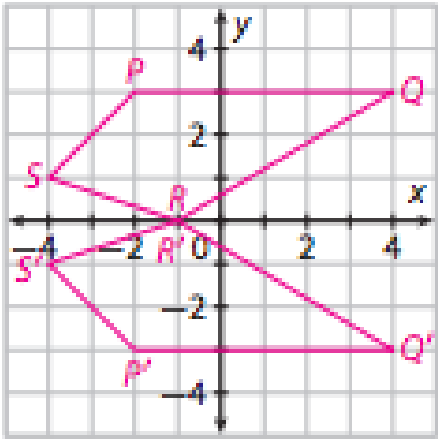
7.



8.

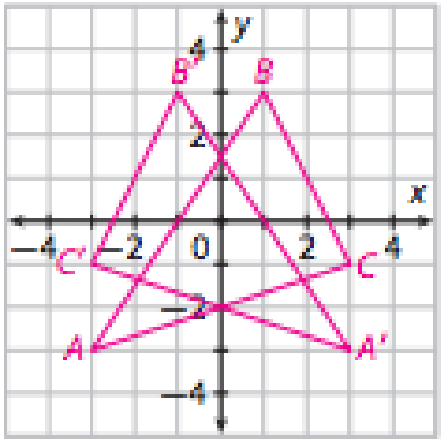


9. $P(-2, 3)$, $Q(4, 3)$, $R(-1, 0)$, $S(-4, 1)$; x-axis



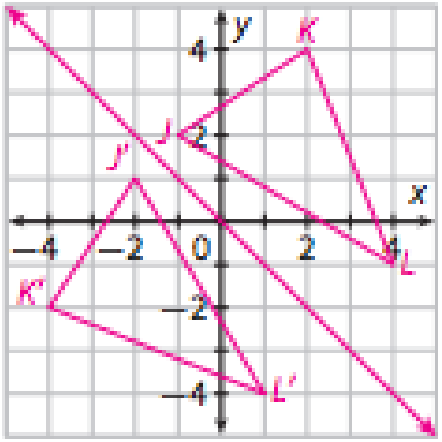
$P'(-2, -3)$,
$Q'(4, -3)$,
$R'(-1, 0)$,
$S'(-4, -1)$

10. $A(-3, -3)$, $B(1, 3)$, $C(3, -1)$; y-axis



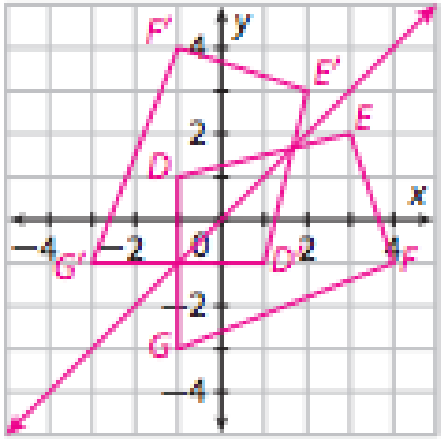
$A'(3, -3)$,
$B'(-1, 3)$,
$C'(-3, -1)$

11. $J(-1, 2)$, $K(2, 4)$, $L(4, -1)$; $y = -x$



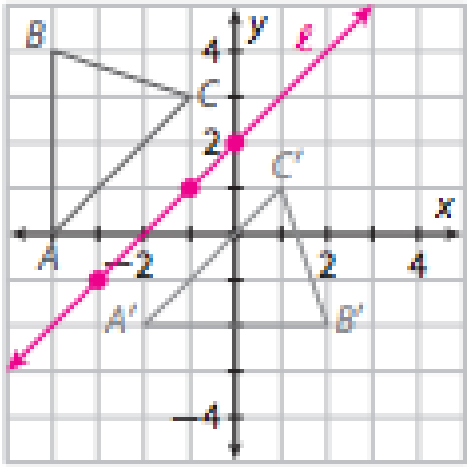
$J'(-2, 1)$,
$K'(-4, -2)$,
$L'(1, -4)$

12. $D(-1, 1)$, $E(3, 2)$, $F(4, -1)$, $G(-1, -3)$; $y = x$



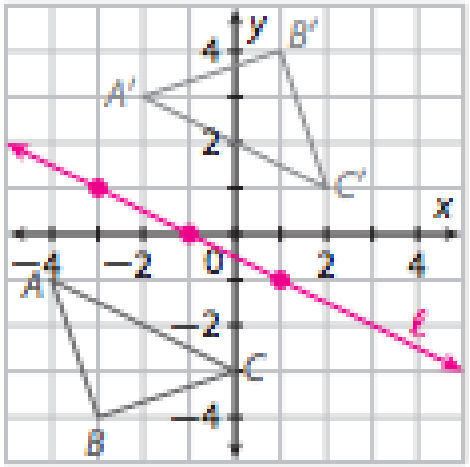
$D'(1, -1)$,
$E'(2, 3)$,
$F'(-1, 4)$,
$G'(-3, -1)$

13.



midpoint of $\overline{AA'}$ is $(-3, -1)$. midpoint of $\overline{BB'}$ is $(-1, 1)$. midpoint of $\overline{CC'}$ is $(0, 2)$.

14.

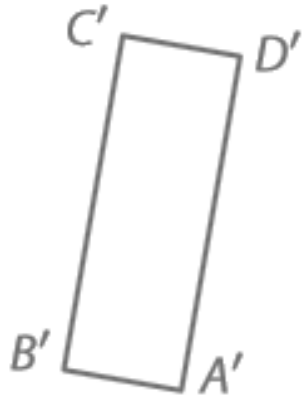


midpoint of $\overline{AA'}$ is $(-3, 1)$. midpoint of $\overline{BB'}$ is $(-1, 0)$. midpoint of $\overline{CC'}$ is $(1, -1)$.

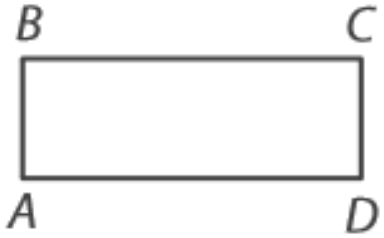
TABLE OF CONTENTS: 2ND SEMESTER

Finding the angle of rotation

- Estimate: by what angle do you think rectangle ABCD was rotated?
- Was it rotated clockwise or counterclockwise?

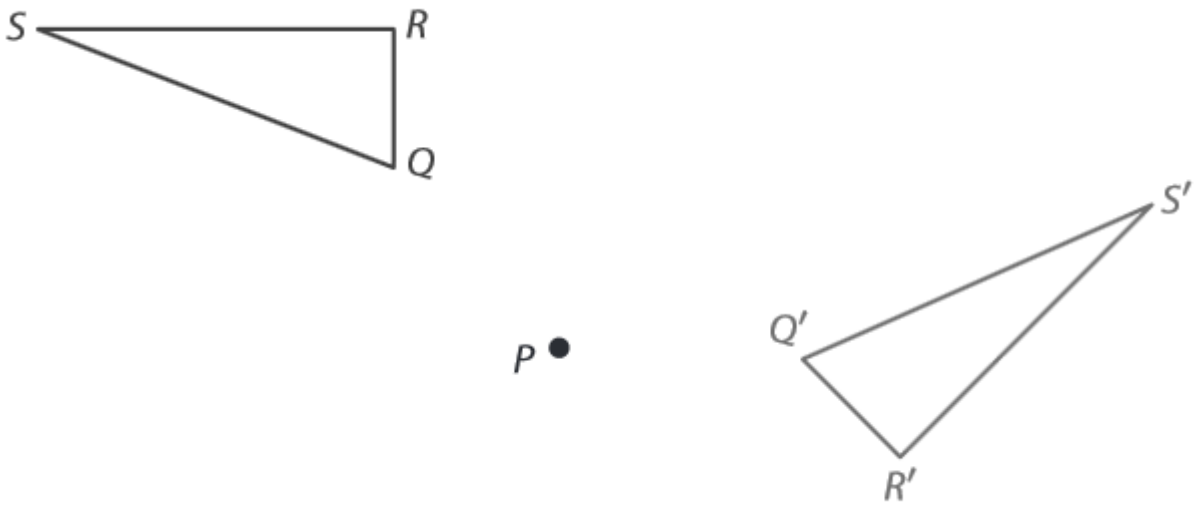


80°



Finding the angle of rotation

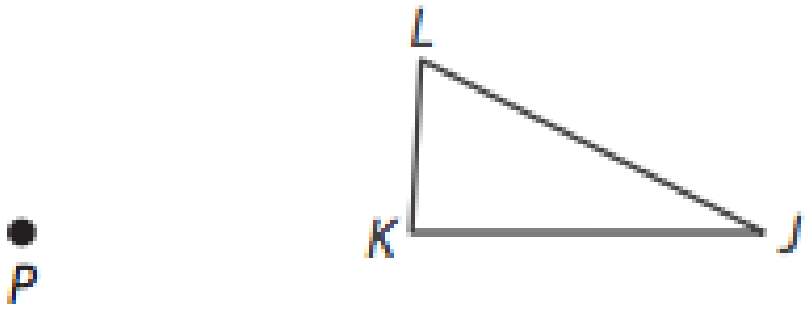
- Estimate: By what angle do you think the shape was rotated?
- Which direction was it rotated?



135°

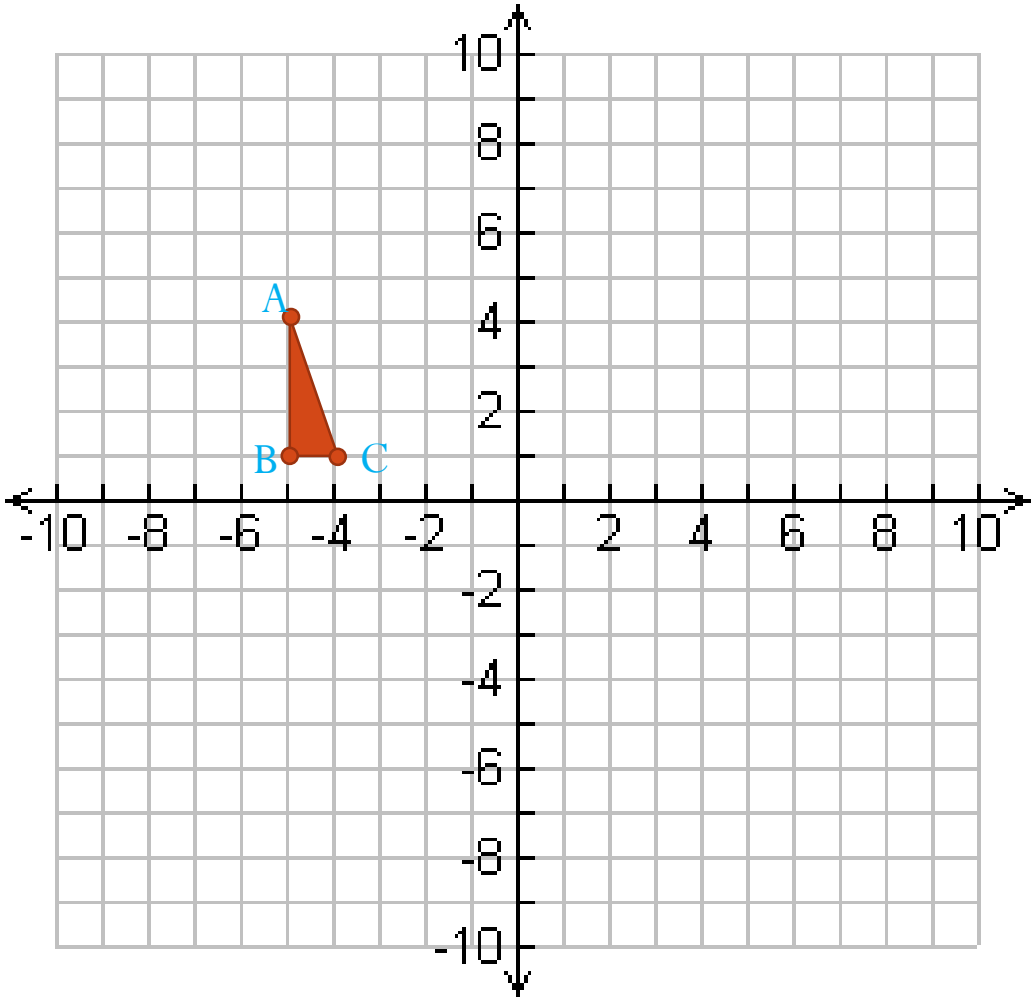
Now you try to draw one!

Counterclockwise rotation of 40° around point P



What about rotations in the coordinate plane?

Challenge: ROTATE the shape 90° clockwise around the origin.



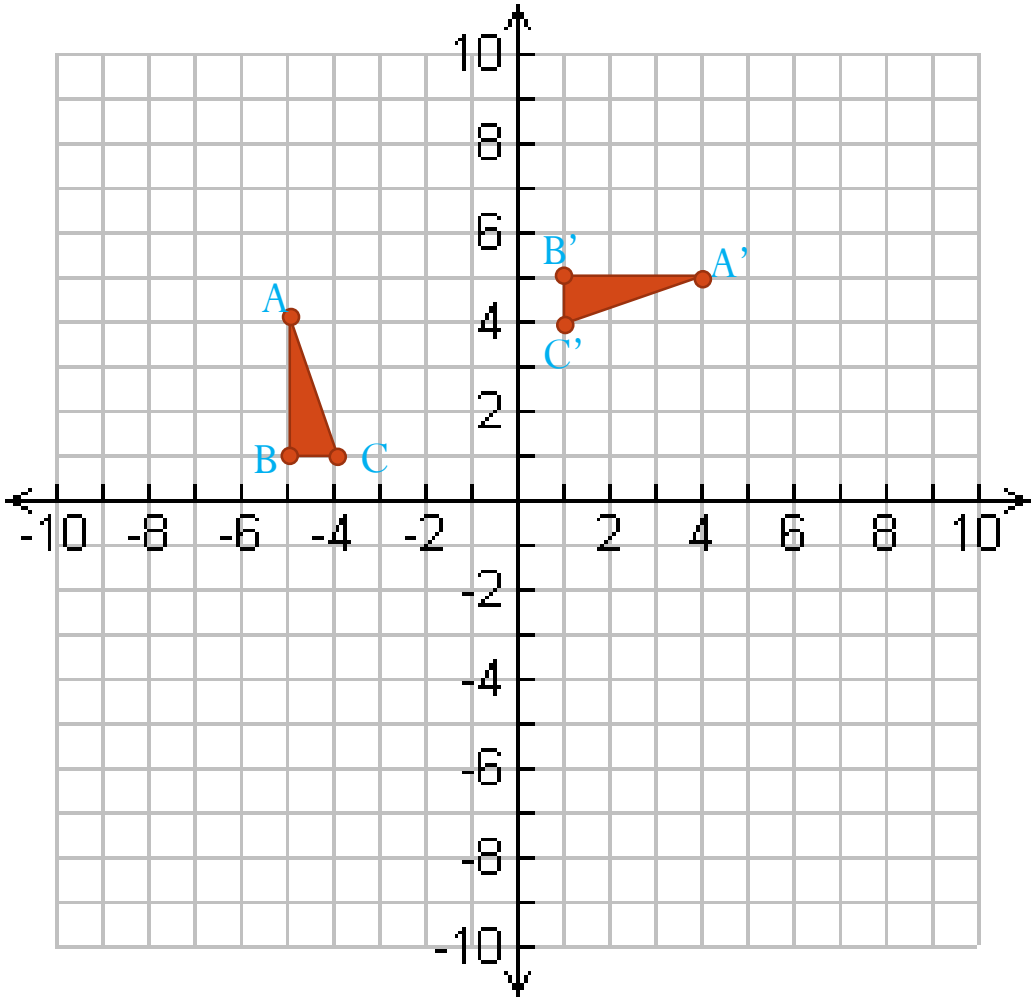
Coordinates:

A (-5, 4)

B (-5, 1)

C (-4, 1)

Challenge: ROTATE the shape 90° clockwise around the origin.



Coordinates:

A (-5, 4)

B (-5, 1)

C (-4, 1)

See Notes Sheet

Homework

- p.865 (5-10)

YOU WILL NEED A PROTRACTOR for 9 and 10!!!