**8-5 Do Now Quiz: Applying Algebra to Geometric Situations**

1. The line $l$ has the equation $y = -\frac{3}{2}x+7$. To each line below, circle whether $l$ is parallel, perpendicular, or neither.

   (a) parallel perpendicular neither $y = -\frac{2}{3}x - 2$

   (b) parallel perpendicular neither $y = \frac{3}{2}x + 9$

   (c) parallel perpendicular neither $2x - 3y = -5$

   (d) parallel perpendicular neither $3x + 2y = 6$

2. What is the equation of a line through the point $A(-1, 3)$ and parallel to the line $y = \frac{1}{3}x - 4$? (hint: use the point-slope formula, $y - y_A = m(x - x_A)$)

3. Simplify each expression. (Leave it in radical form if necessary, not a decimal.)

   (a) $\sqrt{32}$ (b) $\sqrt{\frac{1}{16}}$

4. Write down the center and radius of each circle.

   (a) $(x - 3)^2 + (y - 1)^2 = 6^2$ (c) $(x - 2)^2 + (y - 7)^2 = 15^2$

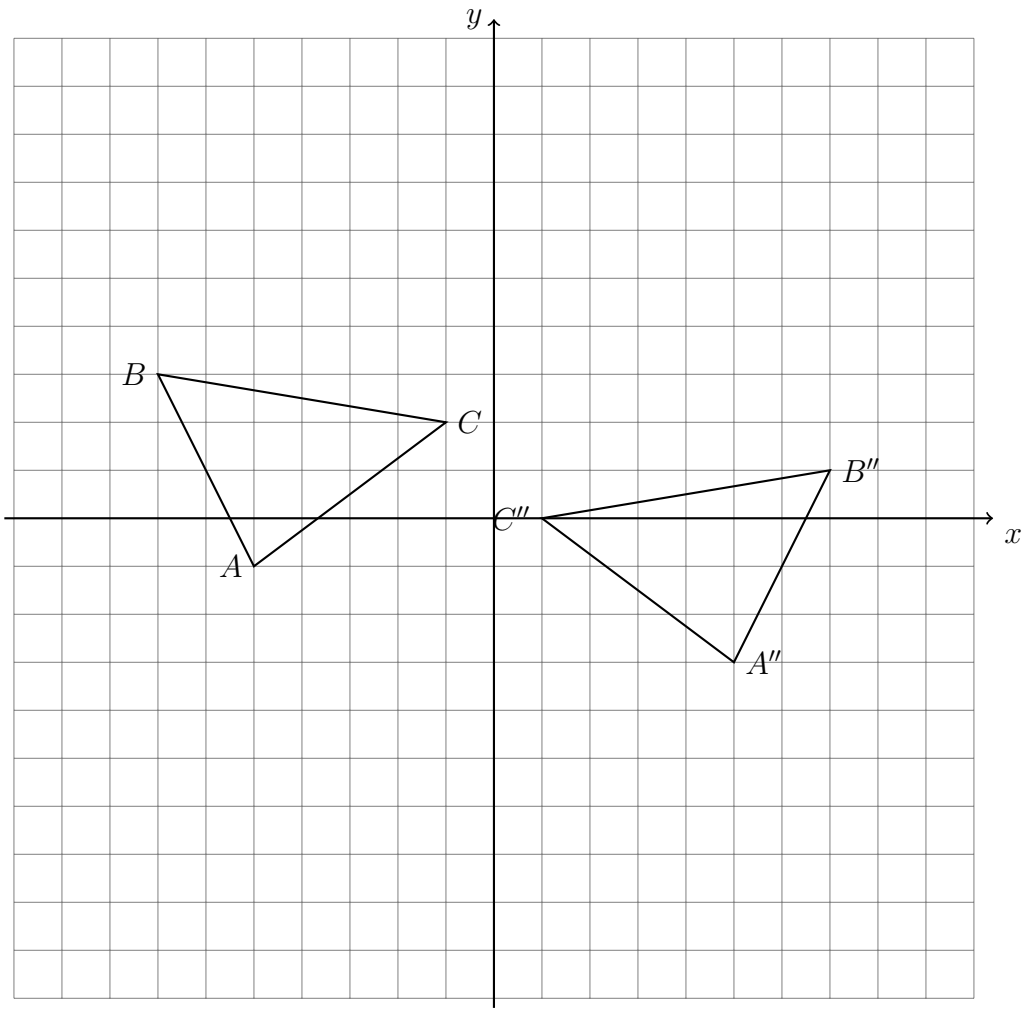
   (b) $(x + 4)^2 + (y + 1)^2 = 4$ (d) $(x - 3)^2 + (y + 5)^2 = 81$

5. $\triangle ABC$ undergoes two tranformations mapping it onto $\triangle A''B''C''$, as shown below. Specify the two tranformations in order. Complete a table showing the coordinates of the translated points.

$A(-5,-1) \rightarrow$

$B(-7,3) \rightarrow$

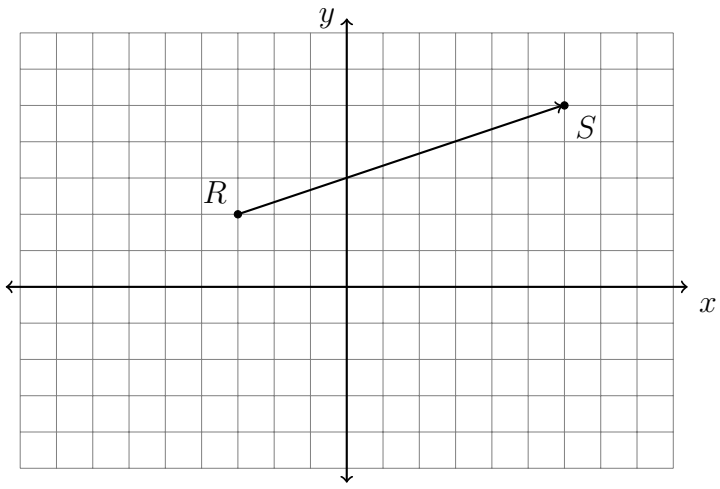
$C(-1,2) \rightarrow$



**8-5 Homework: Distance formula, line segments**

1. A translation maps $A(-1, 2) \to A'(3, -2)$. What is the image of $B(-1, 4)$ under the same translation?

2. As shown below, what is the translation that maps the point $R(-3, 2)$ onto the point $S(6, 5)$?




   If two thirds of that translation was performed, what coordinates would $R$ be mapped to?

3. Given $A(-3, 4)$ and $B(3, 0)$, find the length of $\overline{AB}$. Leave the result in simplified radical form (not a decimal).

4. $\triangle ABC$ undergoes two tranformations mapping it onto $\triangle A''B''C''$, as shown below. Specify the two tranformations in order. Complete a table showing the coordinates of the translated points.

$A(-5,-1) \rightarrow$

$B(-7,3) \rightarrow$

$C(0,3) \rightarrow$