

8-11 Homework: Applying Algebra to Geometric Situations

1. The line l has the equation $y = -\frac{2}{3}x + 4$. 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 $A(0, -2)$ and parallel to the line $y = \frac{2}{5}x - 4$? (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) $\sqrt{12}$

(c) $\sqrt{27}$

(b) $\sqrt{50}$

(d) $\sqrt{\frac{9}{25}}$

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

(a) $(x + 1)^2 + (y - 1)^2 = 16$

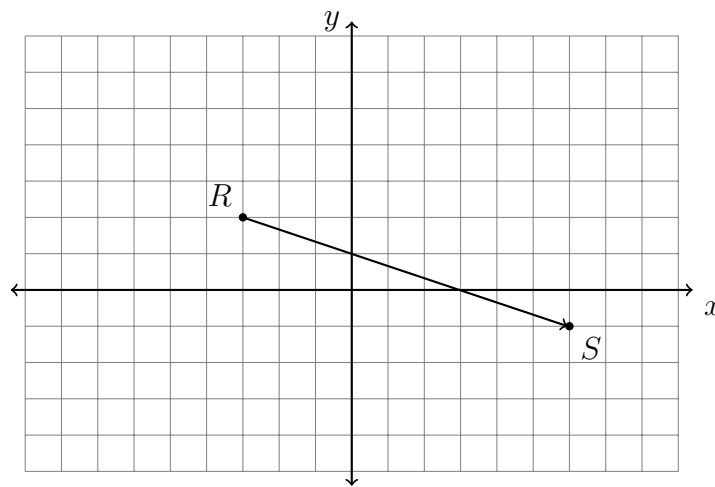
(c) $(x - 2)^2 + (y - 7)^2 = 25$

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

(d) $(x + 3)^2 + (y + 5)^2 = 64$

5. A translation maps $A(5, 7) \rightarrow A'(-5, 7)$. What is the image of $B(-3, 4)$ under the same translation?

6. As shown below, what is the translation that maps the point $R(-3, 2)$ onto the point $S(6, -1)$?



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

7. Given $A(-3, 5)$ and $B(2, 0)$, find the length of \overline{AB} . Leave the result in simplified radical form (not a decimal).