### Lesson 9 Practice Problems

1. Select **all** the equations that represent the graph shown.
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	1. $3x−2y=6$
	2. $y=\frac{3}{2}x+3$
	3. $y=\frac{3}{2}x−3$
	4. $y−3=\frac{3}{2}\left(x−4\right)$
	5. $y−6=\frac{3}{2}\left(x−2\right)$
1. A line with slope $\frac{3}{2}$ passes through the point $\left(1,3\right)$.
	1. Explain why $\left(3,6\right)$ is on this line.
	2. Explain why $\left(0,0\right)$ is not on this line.
	3. Is the point $\left(13,22\right)$ on this line? Explain why or why not.
2. Write an equation of the line that passes through $\left(1,3\right)$ and has a slope of $\frac{5}{4}$.
3. A parabola has focus $\left(3,-2\right)$ and directrix $y=2$. The point $\left(a,-8\right)$ is on the parabola. How far is this point from the focus?
	1. 6 units
	2. 8 units
	3. 10 units
	4. cannot be determined
* (From Unit 6, Lesson 8.)
1. Write an equation for a parabola with each given focus and directrix.
	1. focus: $\left(5,2\right)$; directrix: $x$-axis
	2. focus: $\left(-2,3\right)$; directrix: the line $y=7$
	3. focus: $\left(0,7\right)$; directrix: $x$-axis
	4. focus: $\left(-3,-4\right)$; directrix: the line $y=-1$
* (From Unit 6, Lesson 8.)
1. A parabola has focus $\left(-1,6\right)$ and directrix $y=4$. Determine whether each point on the list is on this parabola. Explain your reasoning.
	1. $\left(-1,5\right)$
	2. $\left(1,7\right)$
	3. $\left(3,9\right)$
* (From Unit 6, Lesson 7.)
1. Select the center of the circle represented by the equation $x^{2}+y^{2}−8x+11y−2=0$.
	1. $\left(8,11\right)$
	2. $\left(4,5.5\right)$
	3. $\left(-4,-5.5\right)$
	4. $\left(4,-5.5\right)$
* (From Unit 6, Lesson 6.)
1. Reflect triangle $ABC$ over the line $x=-6$.
* Translate the image by the directed line segment from $\left(0,0\right)$ to $\left(5,-1\right)$.
* What are the coordinates of the vertices in the final image?
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* (From Unit 6, Lesson 1.)



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