### 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. $y−3=\frac{3}{2}(x−4)$
	5. $y−6=\frac{3}{2}(x−2)$
1. A line with slope $\frac{3}{2}$ passes through the point $(1,3)$.
	1. Explain why $(3,6)$ is on this line.
	2. Explain why $(0,0)$ is not on this line.
	3. Is the point $(13,22)$ on this line? Explain why or why not.
2. Write an equation of the line that passes through $(1,3)$ and has a slope of $\frac{5}{4}$.
3. A parabola has focus $(3,-2)$ and directrix $y=2$. The point $(a,-8)$ 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: $(5,2)$; directrix: $x$-axis
	2. focus: $(-2,3)$; directrix: the line $y=7$
	3. focus: $(0,7)$; directrix: $x$-axis
	4. focus: $(-3,-4)$; directrix: the line $y=-1$
* (From Unit 6, Lesson 8.)
1. A parabola has focus $(-1,6)$ and directrix $y=4$. Determine whether each point on the list is on this parabola. Explain your reasoning.
	1. $(-1,5)$
	2. $(1,7)$
	3. $(3,9)$
* (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. $(8,11)$
	2. $(4,5.5)$
	3. $(-4,-5.5)$
	4. $(4,-5.5)$
* (From Unit 6, Lesson 6.)
1. Reflect triangle $ABC$ over the line $x=-6$.
* Translate the image by the directed line segment from $(0,0)$ to $(5,-1)$.
* What are the coordinates of the vertices in the final image?
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* (From Unit 6, Lesson 1.)



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