### Lesson 16 Practice Problems

1. For each equation, identify the values of $a$, $b$, and $c$ that you would substitute into the quadratic formula to solve the equation.
	1. $3x^{2}+8x+4=0$
	2. $2x^{2}−5x+2=0$
	3. $-9x^{2}+13x−1=0$
	4. $x^{2}+x−11=0$
	5. $-x^{2}+16x+64=0$
2. Use the quadratic formula to show that the given solutions are correct.
	1. $x^{2}+9x+20=0$. The solutions are $x=-4$ and $x=-5$.
	2. $x^{2}−10x+21=0$. The solutions are $x=3$ and $x=7$.
	3. $3x^{2}−5x+1=0$. The solutions are $x=\frac{5}{6}\pm \frac{\sqrt{13}}{6}$.
3. Select **all** the equations that are equivalent to $81x^{2}+180x−200=100$
	1. $81x^{2}+180x−100=0$
	2. $81x^{2}+180x+100=200$
	3. $81x^{2}+180x+100=400$
	4. $\left(9x+10\right)^{2}=400$
	5. $\left(9x+10\right)^{2}=0$
	6. $\left(9x−10\right)^{2}=10$
	7. $\left(9x−10\right)^{2}=20$
* (From Unit 7, Lesson 14.)
1. *Technology required.* Two objects are launched upward. Each function gives the distance from the ground in meters as a function of time, $t$, in seconds.
* Object A: $f\left(t\right)=25+20t−5t^{2}$
* Object B: $g\left(t\right)=30+10t−5t^{2}$
* Use graphing technology to graph each function.
	1. Which object reaches the ground first? Explain how you know.
	2. What is the maximum height of each object?
* (From Unit 6, Lesson 6.)
1. Identify the values of $a$, $b$, and $c$ that you would substitute into the quadratic formula to solve the equation.
	1. $x^{2}+9x+18=0$
	2. $4x^{2}−3x+11=0$
	3. $81−x+5x^{2}=0$
	4. $\frac{4}{5}x^{2}+3x=\frac{1}{3}$
	5. $121=x^{2}$
	6. $7x+14x^{2}=42$
2. On the same coordinate plane, sketch a graph of each function.
	* Function $v$, defined by $v\left(x\right)=\left|x+6\right|$
	* Function $z$, defined by $z\left(x\right)=\left|x\right|+9$
* 
* (From Unit 4, Lesson 14.)



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