### Lesson 16 Practice Problems

1. What number should be added to the expression $x^{2}−15x$ to result in an expression equivalent to a perfect square?
	1. -7.5
	2. 7.5
	3. -56.25
	4. 56.25
2. Noah uses the quadratic formula to solve the equation $2x^{2}+3x−5=4$. He finds $x=-2.5$ or 1. But, when he checks his answer, he finds that neither -2.5 nor 1 are solutions to the equation. Here are his steps:
* $a=2$, $b=3$, $c=-5$
* $x=\frac{-3\pm \sqrt{3^{2}−4⋅2⋅-5}}{2⋅2}$
* $x=\frac{-3\pm \sqrt{49}}{4}$
* $x=-2.5$ or 1
	1. Explain what Noah’s mistake was.
	2. Solve the equation correctly.
1. Solve each quadratic equation with the method of your choice.
	1. $x^{2}−2x=-1$
	2. $x^{2}+8x+14=23$
	3. $x^{2}−15=0$
	4. $7x^{2}−2x−5=0$
	5. $2x^{2}+12x=8$
2. What are the solutions to the equation $x^{2}−4x=-3$?
	1. $\frac{4\pm \sqrt{16−4⋅0⋅-3}}{2⋅0}$
	2. $\frac{4\pm \sqrt{16−4⋅1⋅-3}}{2⋅1}$
	3. $\frac{4\pm \sqrt{16−4⋅1⋅3}}{2⋅1}$
	4. $\frac{-4\pm \sqrt{16−4⋅1⋅3}}{2⋅1}$
3. Which expression is equivalent to $\sqrt{-23}$?
	1. $-23i$
	2. $23i$
	3. $-i\sqrt{23}$
	4. $i\sqrt{23}$
* (From Unit 3, Lesson 11.)
1. Write each expression in the form $a+bi$, where $a$ and $b$ are real numbers.
	1. $5i^{2}$
	2. $i^{2}⋅i^{2}$
	3. $\left(-3i\right)^{2}$
	4. $7⋅4i$
	5. $\left(5+4i\right)−\left(-3+2i\right)$
* (From Unit 3, Lesson 12.)
1. Let $m=\left(7−2i\right)$ and $k=3i$. Write each expression in the form $a+bi$, where $a$ and $b$ are real numbers.
	1. $k−m$
	2. $k^{2}$
	3. $m^{2}$
	4. $k⋅m$
* (From Unit 3, Lesson 13.)



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