### Lesson 18 Practice Problems

1. Clare solves the quadratic equation $4x^{2}+12x+58=0$, but when she checks her answer, she realizes she made a mistake. Explain what Clare's mistake was.
* $\begin{matrix}x&=\frac{-12\pm \sqrt{12^{2}−4⋅4⋅58}}{2⋅4}\\x&=\frac{-12\pm \sqrt{144−928}}{8}\\x&=\frac{-12\pm \sqrt{-784}}{8}\\x&=\frac{-12\pm 28i}{8}\\x&=-1.5\pm 28i\end{matrix}$
1. Write in the form $a+bi$, where $a$ and $b$ are real numbers:
	1. $\frac{5\pm \sqrt{-4}}{3}$
	2. $\frac{10\pm \sqrt{-16}}{2}$
	3. $\frac{-3\pm \sqrt{-144}}{6}$
2. Priya is using the quadratic formula to solve two different quadratic equations.
* For the first equation, she writes $x=\frac{4\pm \sqrt{16−72}}{12}$
* For the second equation, she writes $x=\frac{8\pm \sqrt{64−24}}{6}$
* Which equation(s) will have real solutions? Which equation(s) will have non-real solutions? Explain how you know.
1. Find the exact solution(s) to each of these equations, or explain why there is no solution.
	1. $x^{2}=25$
	2. $x^{3}=27$
	3. $x^{2}=12$
	4. $x^{3}=12$
* (From Unit 3, Lesson 8.)
1. Kiran is solving the equation $\sqrt{x+2}−5=11$ and decides to start by squaring both sides. Which equation results if Kiran squares both sides as his first step?
	1. $x+2−25=121$
	2. $x+2+25=121$
	3. $x+2−10\sqrt{x+2}+25=121$
	4. $x+2+10\sqrt{x+2}+25=121$
* (From Unit 3, Lesson 9.)
1. Plot each number on the real or imaginary number line.
	1. $-\sqrt{4}$
	2. $\sqrt{-1}$
	3. $3\sqrt{4}$
	4. $-3\sqrt{-1}$
	5. $4\sqrt{-1}$
	6. $2\sqrt{2}$
* 
* (From Unit 3, Lesson 10.)



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