### Lesson 14 Practice Problems

1. Solve each equation without using a calculator. Some solutions will need to be expressed using log notation.
	1. $4⋅10^{x}=400,​000$
	2. $10^{\left(n+1\right)}=1$
	3. $10^{3n}=1,​000,​000$
	4. $10^{p}=725$
	5. $6⋅10^{t}=360$
2. Solve $\frac{1}{4}⋅10^{\left(d+2\right)}=0.25$. Show your reasoning.
3. Write two equations—one in logarithmic form and one in exponential form—that represent the statement: “the natural logarithm of 10 is $y$”.
4. Explain why $ln1=0$.
5. If $log\_{10}\left(x\right)=6$, what is the value of $x$? Explain how you know.
* (From Unit 4, Lesson 9.)
1. For each logarithmic equation, write an equivalent equation in exponential form.
	1. $log\_{2}16=4$
	2. $log\_{3}9=2$
	3. $log\_{5}5=1$
	4. $log\_{10}20=y$
	5. $log\_{2}30=y$
* (From Unit 4, Lesson 10.)
1. The function $f$ is given by $f\left(x\right)=e^{0.07x}$.
	1. What is the continuous growth rate of $f$?
	2. By what factor does $f$ grow when the input $x$ increases by 1?
* (From Unit 4, Lesson 13.)



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