### Lesson 5 Practice Problems

1. Write with a single exponent: (ex: $\frac{1}{10}⋅\frac{1}{10}=10^{-2}$)
	1. $\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}$
	2. $\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}$
	3. $\left(\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}\right)^{2}$
	4. $\left(\frac{1}{10}⋅\frac{1}{10}⋅\frac{1}{10}\right)^{3}$
	5. $\left(10⋅10⋅10\right)^{-2}$
2. Write each expression as a single power of 10.
	1. $10^{-3}⋅10^{-2}$
	2. $10^{4}⋅10^{-1}$
	3. $\frac{10^{5}}{10^{7}}$
	4. $\left(10^{-4}\right)^{5}$
	5. $10^{-3}⋅10^{2}$
	6. $\frac{10^{-9}}{10^{5}}$
3. Select **all** of the following that are equivalent to $\frac{1}{10,000}$:
	1. $\left(10,​000\right)^{-1}$
	2. $\left(-10,​000\right)$
	3. $\left(100\right)^{-2}$
	4. $\left(10\right)^{-4}$
	5. $\left(-10\right)^{2}$
4. Match each equation to the situation it describes. Explain what the constant of proportionality means in each equation.
* Equations:
	1. $y=3x$
	2. $\frac{1}{2}x=y$
	3. $y=3.5x$
	4. $y=\frac{5}{2}x$
* Situations:
	+ A dump truck is hauling loads of dirt to a construction site. After 20 loads, there are 70 square feet of dirt.
	+ I am making a water and salt mixture that has 2 cups of salt for every 6 cups of water.
	+ A store has a “4 for $10” sale on hats.
	+ For every 48 cookies I bake, my students get 24.
* (From Unit 5, Lesson 2.)
	1. Explain why triangle $ABC$ is similar to $EDC$.
	+ 
	1. Find the missing side lengths.
* (From Unit 2, Lesson 13.)



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