### Lesson 16 Practice Problems

1. Tickets to a family concert cost $10 for adults and $3 for children. The concert organizers collected a total of $900 from ticket sales.
	1. In this situation, what is the meaning of each variable in the equation $10A+3C=900$?
	2. If 42 adults were at the concert, how many children attended?
	3. If 140 children were at the concert , how many adults attended?
	4. Write an equation to represent $C$ as a function of $A$. Explain what this function tells us about the situation.
	5. Write an equation to represent $A$ as a function of $C$. Explain what this function tell us about the situation.
2. A school group has $600 to spend on T-shirts. The group is buying from a store that gives them a $5 discount off the regular price per shirt.
* $n=\frac{600}{p−5}$ gives the number of shirts, $n$, that can be purchased at a regular price, $p$.
* $p=\frac{600}{n}+5$ gives the regular price, $p$, of a shirt when $n$ shirts are bought.
	1. What is $n$ when $p$ is 20?
	2. What is $p$ when $n$ is 40?
	3. Is one function an inverse of the other? Explain how you know.
1. Functions $f$ and $g$ are inverses, and $f\left(-2\right)=3$. Is the point $\left(3,-2\right)$ on the graph of $f$, on the graph of $g$, or neither?
2. Here are two equations that relate two quantities, $p$ and $Q$:
* $Q=7p+1,​999$
* $p=\frac{Q−1,999}{7}$
* Select **all** statements that are true about $p$ and $Q$.
	1. $Q=7p+1,​999$ could represent a function, but $p=\frac{Q−1,999}{7}$ could not.
	2. Each equation could represent a function.
	3. $p=\frac{Q−1,999}{7}$ could represent a function, but $Q=7p+1,​999$ could not.
	4. The two equations represent two functions that are inverses of one another.
	5. If $Q=7p+1,​999$ represents a function, then the inverse function can be defined by $p=7Q−1,​999$.
1. Elena plays the piano for 30 minutes each practice day. The total number of minutes $p$ that Elena practiced last week is a function of $n$, the number of practice days.
* Find the domain and range for this function.
* (From Unit 4, Lesson 10.)
1. The graph shows the attendance at a sports game as a function of time in minutes.
	1. Describe how attendance changed over time.
	* 
	1. Describe the domain.
	2. Describe the range.
* (From Unit 4, Lesson 11.)
1. Two children set up a lemonade stand in their front yard. They charge $1 for every cup. They sell a total of 15 cups of lemonade. The amount of money the children earned, $R$ dollars, is a function of the number of cups of lemonade they sold, $n$.
	1. Is 20 part of the domain of this function? Explain your reasoning.
	2. What does the range of this function represent?
	3. Describe the set of values in the range of $R$.
	4. Is the graph of this function discrete or continuous? Explain your reasoning.
* (From Unit 4, Lesson 11.)
1. Here is the graph of function $f$, which represents Andre's distance from his bicycle as he walked in a park.
* 
	1. Estimate $f\left(5\right)$.
	2. Estimate $f\left(17\right)$.
	3. For what values of $t$ does $f\left(t\right)=8$?
	4. For what values of $t$ does $f\left(t\right)=6.5$?
	5. For what values of $t$ does $f\left(t\right)=10$?
* (From Unit 4, Lesson 6.)



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