Part A: Representing the Real World with Algebra

	Answer the questions completely.
1.	Logan is saving for a new bike. He has $112 and each week he will earn $20 by mowing lawns. The bike costs $254. Write an equation describing the situation, using the variable *w* for weeks. How many weeks will it be until Logan can buy the bike? Justify your reasoning. Suppose Logan really wants to buy the bike in 5 weeks. How would Logan need to change his saving plan? How would your equation change as a result?
2.	Ayana must complete the book Hamlet in just 8 more days before the big test. The book has 363 pages and she is currently on page 67. She wants to figure out how many pages she'll need to read per day to complete the book. Write an equation describing the situation, using the variable *p* for pages per day. How many pages does Ayana have to read per day to complete the book on time? Justify your reasoning.
3.	Mrs. Miles would like to retire once she has contributed at least $400,000 to her savings account. She has contributed $280,000 to her account to date. Mrs. Miles plans to save $800 each month. Write an **inequality** describing the situation, using the variable *m* for months. What is the minimum number of months Mrs. Miles will need to work to hit her goal? What is the minimum number of years? Justify your reasoning. Suppose Mrs. Miles wins the lottery and is able to add $50,000 to her savings account. How much sooner will she be able to retire? Can you justify your answer in two different ways?