Midterm example program

On the real exam expect similar types of questions, but not necessary on the exact same topics or divided as it is currently divided.

Possible programming exam topics:

* ArrayLists
* Classes (this includes things like accessors, mutators, other methods, static, public/private, tostring, equals etc.),
* Inheritance
* Files
* Exceptions

Part 1:

Create a Book class. Book should have a number of pages, and a title (instance variables should be not be accessible from any other classes).  Create all necessary accessors and mutators so it can be printed as requested by the main. Create a toString to print as shown below. It should also have a method which, takes in “how many page an author intends to add to the book” and returns how many more pages (in addition to the number put into the method) they would have to write to get to 1000 pages.

Part 2:

Create a TextBook class that add to Book. Add in what class (like, a textbook might be used for a java class) the book is used for. Add in all necessary accessors, mutators, and toString for the printout below. Create a method in Textbook to see if it and a book has the same amount of pages; if a TextBook passed in, it always returns true.

Main for Parts 1 and 2

public static void main(String[] args)  
 {  
 Book myBook = new Book(100,"Best of both Worlds");  
 Book myOtherBook = new Book(999,"Time's Arrow");  
   
 System.out.println("First Book: ");  
 System.out.println(myBook);  
 System.out.println("Second Book: ");  
 System.out.println(myOtherBook);  
   
 System.out.println("On book \""+myBook.getTitle()+ "\", how many more pages to 1000 if I added 256?: "+myBook.morePages(256));  
   
 TextBook csBook = new TextBook(880, "CLRS", "Algorithms");  
 System.out.println(csBook);  
 System.out.println("On book \""+csBook.getTitle()+ "\", how many more pages to 1000 if I added 256?: "+csBook.morePages(256));  
   
 Book myOtherBookCopyTwo = new Book(881,"Time's Arrow");  
 TextBook csBooTwo = new TextBook(882, "Java Book", "CCS1054");  
   
 System.out.println(csBook.hasSamePages(myOtherBookCopyTwo));  
 System.out.println(csBooTwo.hasSamePages(csBook));  
 }

Output:

First Book:

Best of both Worlds with 100 pages

Second Book:

Time's Arrow with 999 pages

On book "Best of both Worlds", how many more pages to 1000 if I added 256?: 644

Algorithms: CLRS with 880 pages

On book "CLRS", how many more pages to 1000 if I added 256?: -136

false

true

Part 3:

Create a program to read in a numbers from a file until “EXIT” is seen. Find the “middle” number where middle = ((amount of numbers read in)/2), square it and then print it out.

Example file:

1

4

3

7.7

8

EXIT

Output:

9