Another object example: Calendar Date

attributes/data fields  operations/methods
month (int)            set Date
date (int)             get Date
year (int)             get Next Date
day (String)           get Previous Date

Method to get next Date?

public int getNextDate() {

    // Deal with month transitions first
    if (this.date == 31 && (this.month == 1 || this.month == 3))
        return 1,
    else if (this.date == 30 && (this.month == 4 ||
        this.month == 6 ||
        this.month == 9 ||
        this.month == 11))
        return 1,
    else if (this.date == 28 && this.month == 2 &&
        this.year % 4 == 0)
        return 29,
    else if (this.date == 28 && this.month == 2 &&
        this.year % 4 != 0)
        return 1;

    // Leap year?
    else if (this.date == 28 && this.month == 2 &&
        this.year % 4 == 0)
        return 29,
    else if (this.date == 28 && this.month == 2 &&
        this.year % 4 != 0)
        return 1;

    // More =>
}
else if (this.date == 29 && this.month == 2)
    return 1;
else
    return this.date + 1;
Object Equality (not really in Book)
Parameter Passing ( )

Primitive Data:

int num1;  - num1
int num2;  - num2

num1 = 5;  5 num1
num2 = 10;  10 num2

primitive data: variable holds value.

objects: variable holds address of memory location
       where object is stored.
       Variable "points to" memory location of object.

Suppose we had another constructor in BankAccount class
that takes all variables as a parameter:

public BankAccount (String num, String n, double bal)
{
    this.acctNum = num;
    this.name = n;
    this.balance = bal;
}

<Sample Code>
In BankAccountDriver:

```java
BankAccount acct1
```

```
acct1 = new BankAccount("1234", "Alice", 100);
acct2 = new BankAccount("5678", "Bob", 200);
```

(Want acct1 to have same info as acct2, try:

```
acct1 = acct2
```

acct2.deposit(100);
print(acct2.getBalance());  ⇒ 300
print(acct1.getBalance());  ⇒ 300  But never deposited to acct1!!

How would we set the two accounts to be "equal"?

```
acct1.setName(acct2.getName());
acct1.setAcctNum(acct2.getAcctNum());
acct1.setBalance(acct2.getBalance());
```
acct1

Now, changes to acct2 won't affect acct1.

acct2.deposit(150); //from 200
print(acct1.getBalance()); => 200
print(acct2); => 350;

Also important for parameter passing:

How to swap 2 numbers?
Parameter Passing

NumberSwap.java:

```java
... main(...) {

    int num1, num2;
    num1 = 100;
    num2 = 200;
    swap(num1, num2)
    print(num1)
    print(num2)
}

swap(int n1, int n2) {
    int temp = n1;
    n1 = n2;
    n2 = temp;
}
```

OUTPUT: num1: 100  Did not swap!
num2: 200  What happened?