Anything you should already know from various course is not included, just Java type details you may not know.

## Boolean data type notes:

(BooleanTest.java)

* Boolean is a data type
* Equality is (= =) not assignment (=)
* ! is the not operator, it negates
* && is and
* || is or
* ^ is exclusive or
* ~~1 < = numberOfDaysInAMonth < = 31~~ [\\INCORRECT](file:///\\INCORRECT) (works in math only)

In Java, 1<= numberOfDaysInAMonth is evaluated to a Boolean value (true/false), which cannot be compared with 31.

(1< = numberOfDaysInAMonth) && (numberOfDaysInAMonth <=31)

* When evaluating n1 && n2, Java first evaluates n1 and then, if n1 is true, evaluates n2. If n1 is false, it never looks at n2.
* Similarly, for n1||n2, Java first evaluates n1 and then, if n1 is true it never evaluates n2. If n2 is false, evaluates n2.

## Better coding, more efficient

if (num %2 == 0) boolean even

even = true; = number % 2 = = 0;

else

even = false;

if(even == true) if (even)

System.out.println(“It is even”); System.out.println(“It is even”);

In Lottery;

Guess % 10 obtains the last digit from guess and guess /10 obtains the first digit

Practice questions for you to try:

1. List 6 comparison operators.

==

&&

^

!

||

<

1. Write a Boolean expression that evaluates to true if a number is stored in a variable num between 1 and 100.
2. Write a Boolean expression that evaluates to true if weight is greater than 50 **or** height is greater than 160.
3. Write a Boolean expression that evaluates to true if weight is greater than 50 **and** height is greater than 160.
4. Write a Boolean expression that evaluates to true if either weight is greater than 50 **or** height is greater than 120, but not both.

You write up the rest of the Summary page this time. What is different/new in each example.