

ICS 3C/3U Quiz - Selection in Java

Completion

Complete each statement.

Assume that the following declarations and assignments have been made:

```
int age = 16;
int height = 175;
int weight = 70;
char sex = 'M'
boolean healthy = true;
```

Using these values, evaluate each expression.

1. $\overset{\text{true}}{\text{age}} \geq 16 \ \&\& \ \overset{\text{true}}{\text{healthy}}$ true
2. $\text{!(weight} \leq 75) \ \&\& \ \text{height} \geq 180$ false
3. $\overset{\text{true}}{\text{age}} > 10 \ || \ (\overset{\text{false}}{\text{sex}} == \text{'F'} \ \&\& \ \overset{\text{true}}{\text{height}} < 170)$ true
4. $\text{!(height} < 160) \ \&\& \ (\overset{\text{true}}{\text{weight}} > 60)$ true

For each legal expression, state its value. For each illegal expression, state the reason that it is not legal.

5. $!(3 < 4.5)$ false
6. $\text{'r'} < \text{'q'}$ false
7. $!(17 / 5 = 3.4)$ illegal, = should be ==
8. $\text{'6'} - \text{'2'} == \text{'4'}$ false

Short Answer

9. Write a **code fragment** that will test if the integer variable **input** is even (i.e., evenly divisible by two), and output a message indicating the result. For example, an input of 6 should produce the output, "6 is an even number", while an input of 7 should produce, "7 is an odd number".

```
if (input % 2 == 0)
{
    System.out.println(input + " is an even number");
}
else
{
    System.out.println(input + " is an odd number");
}
```

10. Write a **code fragment** that will subtract one from the value of **pagesLeft** if the variable **lineCount** is greater than **pageLength**.

```

if (lineCount > pageLength)
{
    pagesLeft -- ;
}

```

11. Rewrite the following code fragment using nesting.

```

if (p && q)
{
    System.out.println("Both true");
}
if (p && !q)
{
    System.out.println("Only first true");
}
if (!p && q)
{
    System.out.println("Only second true");
}
if (!p && !q)
{
    System.out.println("Neither true");
}

```

How many comparisons are made in the above code? 4

In your nested code, how many comparisons are made? Minimum: 1 Maximum: 3

```

if (p && q)
{
    "Both true"
}
else if (p && !q)
{
    "only first true"
}
else if (!p && q)
{
    "only second true"
}
else
{
    "neither true"
}

```