

COSC-111 INTRODUCTION TO COMPUTER SCIENCE I

MORE PRACTICE WITH IF/ELSE STATEMENTS

1. In the soccer World Cup, if a game is tied after the regular 90 minutes of play, there will be 30 minutes of extra time, but only if the game is a playoff game. Given an `int team1score`, an `int team2score`, and a `boolean isPlayoff`, write an `if` statement that sets a `boolean extraTime` to `true` or `false` depending on whether there will be extra time.

2. The local movie theater offers different price tickets for young children (5 and under), children (over 5, 13 and under), and adults (over 13); tickets for each age group cost one price for matinee shows and another price for evening shows. Consider the following code:

```
int age;
System.out.println("How old are you?");
age = keyboard.nextInt();
int price = 3;
if((age <= 5 && !isMatinee) || age > 5) {
    price = price + 3;
}
if((age > 5 && age <= 13 && !isMatinee) || age > 13) {
    price = price + 4;
}
if(age > 13 && !isMatinee) {
    price = price + 5;
}
```

How much do tickets cost for young children, children, and adults for matinee and evening shows?

Group	Matinee	Evening
Young children		
Children		
Adults		

3. Consider the following code:

```
int i = 9;
int j = 15;
if(i <= 10 || j < 7 && i + j < 20) {
    System.out.println("Success!");
}
else {
    System.out.println("Failure.");
}
```

What will be printed to the screen?

COSC-111 INTRODUCTION TO COMPUTER SCIENCE I PRACTICE WITH BOOLEAN OPERATORS

1. Consider the following code:

```
double x = keyboard.nextDouble();
if((int)(x*10) % 5 == 0 && (int)(x + 0.5) >= (int)x + 1
    && !(x <= 7 || !(x < 9)) && x - 2 == x/3 * 2 + 0.5) {
    System.out.println(x + " works!");
}
else {
    System.out.println(x + " doesn't work.");
}
```

There is only one value of x for which this piece of code will print that x works. That is, we could replace this code with the following:

```
if(x == _____) {
    System.out.println(x + " works!");
}
else {
    System.out.println(x + " doesn't work.")
}
```

Fill in the blank.

2. In the made-up course COSC-001, grades are based on the following values:

- Homework (stored in `int hw` and ranging from 0 to 100)
- Midterm 1 (stored in `int mt1` and ranging from 0 to 100)
- Midterm 2 (stored in `int mt2` and ranging from 0 to 100)
- Final exam (stored in `int finalExam` and ranging from 0 to 100)
- Number of absences (stored in `int absences`)

In the final course grade, homework is worth 30%, each midterm is worth 20%, and the final is worth 30%. However, there are two special rules:

- If your midterm 1 score is at least 20 points lower than your midterm 2 score, and you have at most 3 absences, then your midterm 1 only counts for 10% and your midterm 2 counts for 30%.
- If you have a perfect attendance record, or if you have at most 2 absences but your homework score is at least 90, then you get 2 points added to your final grade.

Given initialized variables for each of the five items above, write some if statements to set an `int grade` to the student's final numeric grade.