

1. (10 Points) true or false?

<p>a. Given the following variable definitions:</p> <pre>int total = 0; for (int i = 1 ; i <= 5 ; i++) { total += i * 2; }</pre> <p>total has the value 28 at the end of the for loop</p>	<p>true</p> <p>or</p> <p>false</p>
<p>b. Given the following variable definitions:</p> <pre>String s = "Mississippi"; char c1 = s.charAt(5); char c2 = s.charAt(6); boolean b = (c1 == c2); // b evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>c. Given the following variable definition:</p> <pre>String userString = "Chicago Cubs, 2016 World Series Champions";</pre> <p>The following expression:</p> <pre>Character.isLetter(userString.charAt(7)); // evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>d. Given:</p> <pre>for (int i = 0 ; i < 5 ; i++) { if ((i % 2) == 0) { continue; } else { System.out.println("i = " + i); } }</pre> <p>The loop will print output for i = 1 & i = 3 only.</p>	<p>true</p> <p>or</p> <p>false</p>
<p>e. Given the following array definition:</p> <pre>int[] arr = new int[10];</pre> <p>The following loop will loop 10 times:</p> <pre>for (int i = 1 ; i <= arr.length ; i++) { arr[i] += 1; }</pre>	<p>true</p> <p>or</p> <p>false</p>

2. (30 Points) Given three arrays (colors added for emphasis):

```
int[] studentIDs = {5534, 2238, 6598, 7922, 4973}; // array of student IDs
int[] numGrades = {4, 2, 3, 1, 2}; // array of number of grades for each student
int[] grades = {87, 92, 33, 65, 79, 92, 88, 95, 75, 99, 68, 72}; // array of grades
```

Your program should produce the following output:

```
Student ID = 5534 Count = 4 Grades = 87 92 33 65
Student ID = 2238 Count = 2 Grades = 79 92
Student ID = 6598 Count = 3 Grades = 88 95 75
Student ID = 7922 Count = 1 Grades = 99
Student ID = 4973 Count = 2 Grades = 68 72
```

```
public class StudentGrades {

    public static void main(String[] args) {
        int[] studentIDs = {5534, 2238, 6598, 7922, 4973};
        int[] numGrades = {4, 2, 3, 1, 2};
        int[] grades = {87, 92, 33, 65, 79, 92, 88, 95, 75, 99, 68, 72};

        /* Your solution goes here */
    }
}
```

3. (20 Points) What is the output of the following program?

```
public class Switch1 {  
    public static void main(String[] args) {  
        for (int i = 10; i >= 0; i -= 2) {  
            switch (i) {  
                case 0:  
                    System.out.println(i + ":" + i);  
                    break;  
                case 2:  
                    System.out.println(i + ":" + (i * 5) % 3);  
                case 4:  
                    System.out.println(i + ":" + (i * 3) % 5);  
                    break;  
                case 6:  
                    System.out.println(i + ":" + (i * 4) % 9);  
                case 8:  
                    System.out.println(i + ":" + (i * 5) % 6);  
                default:  
                    System.out.println(i + ":" + (i * 2) % 8);  
                    break;  
            }  
        }  
    }  
}
```

Output:

4. (20 Points) What is the output of the following program?

```
public class BreakContinue1 {  
  
    public static void main(String[] args) {  
        for (int i = 0; i <= 6; i += 2) {  
            int j = 6;  
            while (j >= 0) {  
                if (i == j) {  
                    break;  
                } else if (i > j--) {  
                    continue;  
                }  
                System.out.println("i = " + i + " : " + "j = " + j);  
                j--;  
            }  
        }  
    }  
}
```

Output:

5. (40 Points) Write a complete Java program that prompts the user to input five pairs of numbers: A player's jersey number (0 - 99) and the player's rating (1 - 9). Store the jersey numbers in one int array and the ratings in another int array. Your prompts should appear as follows:

```
Enter player 1's jersey number: 84
Enter player 1's rating: 7
...
Enter player 5's jersey number: 23
Enter player 5's rating: 4
```

Implement a menu of options that allows the user to view the roster and modify player ratings. Each option is represented by a single character. The program initially outputs the menu, and outputs the menu after a user chooses an option. The program ends when the user chooses the option to Quit. Your menu should appear as follows:

```
MENU
o - Output roster
u - Update player rating
a - Output players above a rating
q - Quit

Choose an option:
```

Choosing **'Output roster'** should produce output that appears as follows:

```
ROSTER
Player 1 -- Jersey number: 84, Rating: 7
Player 2 -- Jersey number: 23, Rating: 4
...
```

Choosing the **'Update player rating'** should Prompt the user for a player's jersey number. Prompt again for a new rating for the player, and then change that player's rating.

```
Enter a jersey number: 23
Enter a new rating for player: 6
```

Choosing **'Output players above a rating'** should prompt the user for a rating and then print the jersey number and rating of all players with ratings above the specified rating:

```
Enter a rating: 5

ABOVE 5
Player 1 -- Jersey number: 84, Rating: 7
...
```

Choosing **'Quit'** should cause your program to exit.

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1. (10 Points) true or false?

<p>a. Given the following variable definitions:</p> <pre>int total = 0; for (int i = 1 ; i <= 5 ; i++) { total += i * 3; }</pre> <p>total has the value 45 at the end of the for loop</p>	<p>true</p> <p>or</p> <p>false</p>
<p>b. Given the following variable definitions:</p> <pre>String s = "Mississippi"; char c1 = s.charAt(2); char c2 = s.charAt(9); boolean b = (c1 == c2); // b evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>c. Given the following variable definition:</p> <pre>String userString = "Chicago Cubs, 2016 World Series Champions";</pre> <p>The following expression:</p> <pre>Character.isLetter(userString.charAt(11)); // evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>d. Given:</p> <pre>for (int i = 0 ; i < 5 ; i++) { if ((i % 2) == 0) { continue; } else { System.out.println("i = " + i); } }</pre> <p>The loop will print output for i = 2 & i = 4 only.</p>	<p>true</p> <p>or</p> <p>false</p>
<p>e. Given the following array definition:</p> <pre>int[] arr = new int[10];</pre> <p>The following loop will loop 10 times:</p> <pre>for (int i = 0 ; i < arr.length ; i++) { arr[i] += 1; }</pre>	<p>true</p> <p>or</p> <p>false</p>

2. (30 Points) Given three arrays (colors added for emphasis):

```
int[] uniformNumbers = {33, 78, 42, 17, 25}; // array of uniform numbers
int[] numQuarters = {3, 2, 4, 1, 2}; // array of number of quarters
int[] points = {10, 12, 11, 14, 16, 17, 19, 11, 18, 10, 14, 16}; // array of points scored
```

Your program should produce the following output:

```
Uniform Number = 33 Quarters Played = 3 Points Scored = 10 12 11
Uniform Number = 78 Quarters Played = 2 Points Scored = 14 16
Uniform Number = 42 Quarters Played = 4 Points Scored = 17 19 11 18
Uniform Number = 17 Quarters Played = 1 Points Scored = 10
Uniform Number = 25 Quarters Played = 2 Points Scored = 14 16
```

```
public class PlayerPoints {

    public static void main(String[] args) {
        int[] uniformNumbers = {33, 78, 42, 17, 25};
        int[] numQuarters = {3, 2, 4, 1, 2};
        int[] points = {10, 12, 11, 14, 16, 17, 19, 11, 18, 10, 14, 16};

        /* Your solution goes here */
    }
}
```

3. (20 Points) What is the output of the following program?

```
public class Switch2 {  
  
    public static void main(String[] args) {  
        for (int i = 15; i >= 0; i -= 3) {  
            switch (i) {  
                case 0:  
                    System.out.println(i + ":" + i);  
                case 3:  
                    System.out.println(i + ":" + (i * 5) % 4);  
                    break;  
                case 6:  
                    System.out.println(i + ":" + (i * 3) % 7);  
                case 9:  
                    System.out.println(i + ":" + (i * 4) % 8);  
                    break;  
                case 12:  
                    System.out.println(i + ":" + (i * 2) % 9);  
                default:  
                    System.out.println(i + ":" + (i * 3) % 7);  
                    break;  
            }  
        }  
    }  
}
```

Output:

4. (20 Points) What is the output of the following program?

```
public class BreakContinue2 {  
  
    public static void main(String[] args) {  
        for (int i = 0; i <= 9; i += 3) {  
            int j = 9;  
            while (j >= 0) {  
                if (i == j) {  
                    break;  
                } else if (i > j) {  
                    j -= 3;  
                    continue;  
                }  
                System.out.println("i = " + i + " : " + "j = " + j);  
                j -= 3;  
            }  
        }  
    }  
}
```

Output:

5. (40 Points) Write a complete Java program that prompts the user to input five pairs of numbers: A player's jersey number (0 - 99) and the player's rating (1 - 9). Store the jersey numbers in one int array and the ratings in another int array. Your prompts should appear as follows:

```
Enter player 1's jersey number: 84
Enter player 1's rating: 7
...
Enter player 5's jersey number: 23
Enter player 5's rating: 4
```

Implement a menu of options that allows the user to view the roster and modify player ratings. Each option is represented by a single character. The program initially outputs the menu, and outputs the menu after a user chooses an option. The program ends when the user chooses the option to Quit. Your menu should appear as follows:

```
MENU
o - Output roster
u - Update player rating
a - Output players above a rating
q - Quit

Choose an option:
```

Choosing **'Output roster'** should produce output that appears as follows:

```
ROSTER
Player 1 -- Jersey number: 84, Rating: 7
Player 2 -- Jersey number: 23, Rating: 4
...
```

Choosing the **'Update player rating'** should Prompt the user for a player's jersey number. Prompt again for a new rating for the player, and then change that player's rating.

```
Enter a jersey number: 23
Enter a new rating for player: 6
```

Choosing **'Output players above a rating'** should prompt the user for a rating and then print the jersey number and rating of all players with ratings above the specified rating:

```
Enter a rating: 5

ABOVE 5
Player 1 -- Jersey number: 84, Rating: 7
...
```

Choosing **'Quit'** should cause your program to exit.

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1. (10 Points) true or false?

<p>a. Given the following variable definitions:</p> <pre>int total = 0; for (int i = 1 ; i <= 5 ; i++) { total += i * 4; }</pre> <p>total has the value 58 at the end of the for loop</p>	<p>true</p> <p>or</p> <p>false</p>
<p>b. Given the following variable definitions:</p> <pre>String s = "Mississippi"; char c1 = s.charAt(2); char c2 = s.charAt(6); boolean b = (c1 == c2); // b evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>c. Given the following variable definition:</p> <pre>String userString = "Chicago Cubs, 2016 World Series Champions";</pre> <p>The following expression:</p> <pre>Character.isLetter(userString.charAt(18)); // evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>d. Given:</p> <pre>for (int i = 0 ; i < 5 ; i++) { if ((i % 2) == 1) { continue; } else { System.out.println("i = " + i); } }</pre> <p>The loop will print output for i = 0 & i = 2 & i = 4 only.</p>	<p>true</p> <p>or</p> <p>false</p>
<p>e. Given the following array definition:</p> <pre>int[] arr = new int[10];</pre> <p>The following loop will loop 9 times:</p> <pre>for (int i = 1 ; i < arr.length ; i++) { arr[i] += 1; }</pre>	<p>true</p> <p>or</p> <p>false</p>

2. (30 Points) Given three arrays (colors added for emphasis):

```
int[] studentIDs = {5534, 2238, 6598, 7922, 4973}; // array of student IDs
int[] numGrades = {4, 2, 3, 1, 2}; // array of number of grades for each student
int[] grades = {87, 92, 33, 65, 79, 92, 88, 95, 75, 99, 68, 72}; // array of grades
```

Your program should produce the following output:

```
Student ID = 5534 Count = 4 Grades = 87 92 33 65
Student ID = 2238 Count = 2 Grades = 79 92
Student ID = 6598 Count = 3 Grades = 88 95 75
Student ID = 7922 Count = 1 Grades = 99
Student ID = 4973 Count = 2 Grades = 68 72
```

```
public class StudentGrades {

    public static void main(String[] args) {
        int[] studentIDs = {5534, 2238, 6598, 7922, 4973};
        int[] numGrades = {4, 2, 3, 1, 2};
        int[] grades = {87, 92, 33, 65, 79, 92, 88, 95, 75, 99, 68, 72};

        /* Your solution goes here */
    }
}
```

3. (20 Points) What is the output of the following program?

```
public class Switch3 {  
  
    public static void main(String[] args) {  
        for (int i = 20; i >= 0; i -= 4) {  
            switch (i) {  
                case 0:  
                    System.out.println(i + ":" + i);  
                    break;  
                case 4:  
                    System.out.println(i + ":" + (i * 5) % 3);  
                case 8:  
                    System.out.println(i + ":" + (i * 3) % 5);  
                    break;  
                case 12:  
                    System.out.println(i + ":" + (i * 4) % 9);  
                case 16:  
                    System.out.println(i + ":" + (i * 2) % 3);  
                default:  
                    System.out.println(i + ":" + (i * 3) % 7);  
                    break;  
            }  
        }  
    }  
}
```

Output:

4. (20 Points) What is the output of the following program?

```
public class BreakContinue3 {  
  
    public static void main(String[] args) {  
        for (int i = 0; i <= 12; i += 4) {  
            int j = 12;  
            while (j >= 0) {  
                if (i == j) {  
                    break;  
                } else if (i > j) {  
                    j -= 4;  
                    continue;  
                }  
                System.out.println("i = " + i + " : " + "j = " + j);  
                j -= 4;  
            }  
        }  
    }  
}
```

Output:

5. (40 Points) Write a complete Java program that prompts the user to input five pairs of numbers: A player's jersey number (0 - 99) and the player's rating (1 - 9). Store the jersey numbers in one int array and the ratings in another int array. Your prompts should appear as follows:

```
Enter player 1's jersey number: 84
Enter player 1's rating: 7
...
Enter player 5's jersey number: 23
Enter player 5's rating: 4
```

Implement a menu of options that allows the user to view the roster and modify player ratings. Each option is represented by a single character. The program initially outputs the menu, and outputs the menu after a user chooses an option. The program ends when the user chooses the option to Quit. Your menu should appear as follows:

```
MENU
o - Output roster
u - Update player rating
a - Output players above a rating
q - Quit

Choose an option:
```

Choosing **'Output roster'** should produce output that appears as follows:

```
ROSTER
Player 1 -- Jersey number: 84, Rating: 7
Player 2 -- Jersey number: 23, Rating: 4
...
```

Choosing the **'Update player rating'** should Prompt the user for a player's jersey number. Prompt again for a new rating for the player, and then change that player's rating.

```
Enter a jersey number: 23
Enter a new rating for player: 6
```

Choosing **'Output players above a rating'** should prompt the user for a rating and then print the jersey number and rating of all players with ratings above the specified rating:

```
Enter a rating: 5

ABOVE 5
Player 1 -- Jersey number: 84, Rating: 7
...
```

Choosing **'Quit'** should cause your program to exit.

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1. (10 Points) true or false?

<p>a. Given the following variable definitions:</p> <pre>int total = 0; for (int i = 1 ; i <= 5 ; i++) { total += i * 5; }</pre> <p>total has the value 60 at the end of the for loop</p>	<p>true</p> <p>or</p> <p>false</p>
<p>b. Given the following variable definitions:</p> <pre>String s = "Mississippi"; char c1 = s.charAt(4); char c2 = s.charAt(11); boolean b = (c1 == c2); // b evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>c. Given the following variable definition:</p> <pre>String userString = "Chicago Cubs, 2016 World Series Champions";</pre> <p>The following expression:</p> <pre>Character.isLetter(userString.charAt(23)); // evaluates to:</pre>	<p>true</p> <p>or</p> <p>false</p>
<p>d. Given:</p> <pre>for (int i = 0 ; i < 5 ; i++) { if ((i % 2) == 1) { continue; } else { System.out.println("i = " + i); } }</pre> <p>The loop will print output for i = 1 & i = 3.</p>	<p>true</p> <p>or</p> <p>false</p>
<p>e. Given the following array definition:</p> <pre>int[] arr = new int[10];</pre> <p>The following loop will loop 5 times:</p> <pre>for (int i = 0 ; i < arr.length ; i += 2) { arr[i] += 1; }</pre>	<p>true</p> <p>or</p> <p>false</p>

2. (30 Points) Given three arrays (colors added for emphasis):

```
int[] uniformNumbers = {33, 78, 42, 17, 25}; // array of uniform numbers
int[] numQuarters = {3, 2, 4, 1, 2}; // array of number of quarters
int[] points = {10, 12, 11, 14, 16, 17, 19, 11, 18, 10, 14, 16}; // array of points scored
```

Your program should produce the following output:

```
Uniform Number = 33 Quarters Played = 3 Points Scored = 10 12 11
Uniform Number = 78 Quarters Played = 2 Points Scored = 14 16
Uniform Number = 42 Quarters Played = 4 Points Scored = 17 19 11 18
Uniform Number = 17 Quarters Played = 1 Points Scored = 10
Uniform Number = 25 Quarters Played = 2 Points Scored = 14 16
```

```
public class PlayerPoints {

    public static void main(String[] args) {
        int[] uniformNumbers = {33, 78, 42, 17, 25};
        int[] numQuarters = {3, 2, 4, 1, 2};
        int[] points = {10, 12, 11, 14, 16, 17, 19, 11, 18, 10, 14, 16};

        /* Your solution goes here */
    }
}
```


3. (20 Points) What is the output of the following program?

```
public class Switch4 {  
    public static void main(String[] args) {  
        for (int i = 25; i >= 0; i -= 5) {  
            switch (i) {  
                case 0:  
                    System.out.println(i + ":" + i);  
                    break;  
                case 5:  
                    System.out.println(i + ":" + (i * 5) % 4);  
                case 10:  
                    System.out.println(i + ":" + (i * 3) % 7);  
                    break;  
                case 15:  
                    System.out.println(i + ":" + (i * 3) % 8);  
                case 20:  
                    System.out.println(i + ":" + (i * 2) % 9);  
                default:  
                    System.out.println(i + ":" + (i * 3) % 7);  
                    break;  
            }  
        }  
    }  
}
```

Output:

4. (20 Points) What is the output of the following program?

```
public class BreakContinue4 {  
  
    public static void main(String[] args) {  
        for (int i = 0; i <= 20; i += 5) {  
            int j = 15;  
            while (j >= 0) {  
                if (i == j) {  
                    break;  
                } else if (i > j) {  
                    j -= 5;  
                    continue;  
                }  
                System.out.println("i = " + i + " : " + "j = " + j);  
                j -= 5;  
            }  
        }  
    }  
}
```

Output:

5. (40 Points) Write a complete Java program that prompts the user to input five pairs of numbers: A player's jersey number (0 - 99) and the player's rating (1 - 9). Store the jersey numbers in one int array and the ratings in another int array. Your prompts should appear as follows:

```
Enter player 1's jersey number: 84
Enter player 1's rating: 7
...
Enter player 5's jersey number: 23
Enter player 5's rating: 4
```

Implement a menu of options that allows the user to view the roster and modify player ratings. Each option is represented by a single character. The program initially outputs the menu, and outputs the menu after a user chooses an option. The program ends when the user chooses the option to Quit. Your menu should appear as follows:

```
MENU
o - Output roster
u - Update player rating
a - Output players above a rating
q - Quit

Choose an option:
```

Choosing '**Output roster**' should produce output that appears as follows:

```
ROSTER
Player 1 -- Jersey number: 84, Rating: 7
Player 2 -- Jersey number: 23, Rating: 4
...
```

Choosing the '**Update player rating**' should Prompt the user for a player's jersey number. Prompt again for a new rating for the player, and then change that player's rating.

```
Enter a jersey number: 23
Enter a new rating for player: 6
```

Choosing '**Output players above a rating**' should prompt the user for a rating and then print the jersey number and rating of all players with ratings above the specified rating:

```
Enter a rating: 5

ABOVE 5
Player 1 -- Jersey number: 84, Rating: 7
...
```

Choosing '**Quit**' should cause your program to exit.

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Version 4

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Version 4

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