

STUDENT ACTIVITY 1.3_1 KEY: ITERATIONS WORKSHEET

MTA Course: Software Development Fundamentals

Topic: Identify the appropriate method for handling repetition

File name: SoftDevFund_SA_1.3_1_key

Lesson Objective:

1.3: Identify the appropriate method for handling repetition.

Resources, software, and additional files needed for this lesson:

- SoftDevFund_PPT_1.3
- SoftDevFund_RL_1.3
- SoftDevFund_SA_1.3_1
- SoftDevFund_SA_1.3_1_key
- SoftDevFund_SA_1.3_2
- SoftDevFund_SA_1.3_2_key

Directions to the student:

Complete the questions to the best of your ability.

Content:

C# Content

1. Transform the following `while` loop into a `for` loop (make sure it produces the same output):

```
int num = 1;
while (num < 20)
{
    Console.WriteLine(num);
    num = num + 1;
}

for (int num = 1; num < 20; num = num+1)
    Console.WriteLine(num);
```

2. Transform the following `for` loop into a `while` loop (make sure it produces the same output):

```
for (int num = 1;
    num < 10; num = num+1)
    Console.WriteLine(num);
```

```
int num = 1;
while (num < 10)
{
    Console.WriteLine(num);
    num = num + 1;
}
```

3. Transform the following `while` loop into a `for` loop (make sure it produces the same output):

```
int num = 10;
while (num >= 0)
{
    Console.WriteLine(num);
    num = num - 1;
}
```

```
for (int num = 10; num >= 0; num = num-1)
    Console.WriteLine(num);
```

4. What output is produced by the following code?

```
for (int x = 0; x < 3; x=x+1)
    Console.WriteLine(x*3);
```

```
0
3
6
```

5. How many lines of output will the following code produce?

```
for (int x = 0; x < 13; x=x+2)
    Console.WriteLine("line");
```

Seven lines of output will be produced.

Output:

```
line
line
line
line
line
line
line
```

VB Content:

1. Transform the following while loop into a for loop (make sure it produces the same output):

```
Dim num As Integer = 1
While num < 20
    Console.WriteLine(num)
    num = num + 1
End While
```

```
Dim num As Integer = 1
For num = 1 to 19
    Console.WriteLine(num)
Next num
```

2. Transform the following for loop into a While loop (make sure it produces the same output):

```
Dim num As Integer = 1
For num = 1 to 9
    Console.WriteLine(num)
Next num
```

```
Dim num As Integer = 1
While num < 10
    Console.WriteLine(num)
    num = num + 1
End While
```

3. Transform the following while loop into a for loop (make sure it produces the same output):

```
Dim num As Integer = 10
While num >= 0
    Console.WriteLine(num)
    num = num - 1
End While
```

```
Dim num As Integer = 10
For num = 10 To 0 Step -1
    Console.WriteLine(num)
Next num
```

4. What output is produced by the following code?

```
Dim x As Integer = 0
For x = 0 To 2
    Console.WriteLine(x*3)
Next
```

0

3

6

5. How many lines of output will the following code produce?

```
Dim x As Integer = 0
For x = 0 To 12 Step 2
    Console.WriteLine("line")
Next
```

Seven lines of output will be produced.

Output:

line
line
line
line
line
line
line