

CS-259

Data Structures with Java

Midterm Exam Review

Instructor: **Joel Castellanos**

e-mail: joel@unm.edu

web: <http://cs.unm.edu/~joel/>

Course website:

<http://cs.unm.edu/~joel/cs259/>



1

Quiz - if: example 1

```
public static void main(String[] args)
{
    int a = 15;
    if (a % 5 == 0) a += 2;
    else a+=5;
    if (a % 5 == 0) a += 3;
    else a -=5;
    if (a % 5 == 0)
    {
        if (a % 3 == 0)
        {
            a +=4;
        }
        else
        {
            if (a % 3 == 0)
            {
                a -=4;
            }
        }
    }
    System.out.println(a);
}
```

The output of this code is:

- a) 8
- b) 12
- c) 14
- d) 16
- e) 20

-2-

Quiz - if: example 2

```
public static void main(String[] args)
{
    int a = 15;
    if (a % 5 == 0) a += 2;
    else a+=5;
    if (a % 5 == 0) a += 3;
    else a -=5;
    if (a % 4 == 0)
    {
        if (a % 3 == 0)
        {
            a +=4;
        }
        else
        {
            if (a % 3 == 0)
            {
                a -=4;
            }
        }
    }
    System.out.println(a);
}
-3-
```

The output of this code is:

- a) 8
- b) 12
- c) 14
- d) 16
- e) 18

Quiz - for: example 1

```
public static void main(String[] args)
{
    int a = 100;
    for (int i=0; i<5; i++)
    {
        for (int k=0; k<6; k+=2)
        {
            a++;
        }
    }
    System.out.println(a);
}
-4-
```

The output of this code is:

- a) 105
- b) 108
- c) 111
- d) 115
- e) 116

Quiz - for: example 2

```
public static void main(String[] args)
{
    int a = 0;
    for (int i=0; i<4; i++)
    {
        for (int k=0; k<6; k+=2)
        {
            a=a+i+k;
        }
    }
    System.out.println(a);
}
```

The output of this code is:

- a) 27
- b) 42
- c) 60
- d) 72
- e) 96

-5-

Solution - for: example 2

```
public static void main(String[] args)
{
    int a = 0;
    for (int i=0; i<4; i++)
    {
        for (int k=0; k<6; k+=2)
        {
            a=a+i+k;
        }
    }
    System.out.println(a);
}
```

<code>a+i+k</code>
0+0+0 = 0
0+0+2 = 2
2+0+4 = 6
6+1+0 = 7
7+1+2 = 10
10+1+4 = 15
15+2+0 = 17
17+2+2 = 21
21+2+4 = 27
27+3+0 = 30
30+3+2 = 35
35+3+4 = 42

-6-

Quiz - for: example 3

```
public static void main(String[] args)
{
    int a = 0;
    for (int i=0; i<4; i++)
    {
        if (i%2 == 0)
        {
            for (int k=0; k<6; k+=2)
            {
                a=a+i+k;
            }
        }
    }
    System.out.println(a);
}
```

The output of this code is:

- a) 18
- b) 20
- c) 22
- d) 24
- e) 42

-7-

Solution - for: example 3

```
public static void main(String[] args)
{
    int a = 100;
    for (int i=0; i<4; i++)
    {
        if (i%2 == 0)
        {
            for (int k=0; k<6; k+=2)
            {
                a=a+i+k;
            }
        }
    }
    System.out.println(a);
}
```

a+i+k
0+0+0 = 0
0+0+2 = 2
2+0+4 = 6
6+1+0 = 7
7+1+2 = 10
10+1+4 = 15
6+2+0 = 8
8+2+2 = 12
12+2+4 = 18
27+3+0 = 30
30+3+2 = 35
35+3+4 = 42

-8-