# Exercise - Tracing/Errors

## Trace through the following questions, if an error exists, state what type of error exists. Confirm your results by entering and running the following programs on Java.

### 1. Trace Through the following question.

a.

```
int x;
int y = 4;
x = y + 3;
x = x - y;
System.out.println(x);
System.out.println(y);
x = -x;
int z = x * y;
System.out.println(x + y + z);
```

| Memory | Output |
|---|---|
| y=4,3<br>x=7,<br>z=-9 | 7<br>3<br>-3<br>11 |

b.

```
String x = "Hello There";
System.out.println(x + "\n" + "/n");
```

| Memory | Output |
|---|---|
| | Exception in thread "main"<br>java.lang.Error: Unresolved<br>compilation problem:<br>string cannot be resolved to a<br>type<br><br>at<br>Question1.main(Question1.java:21) |

c.

```
string x = "Hel There lo";
System.out.println(x + "/n" + "/n");
```

| Memory | Output |
|---|---|
| | Exception in thread "main"<br>java.lang.Error: Unresolved<br>compilation problem: |

| | |
|---|---|
| | string cannot be resolved to a type<br><br>at Question1.main(Question1.java:25) |

d.

```
int x = 3;
int y = 2;
int a = x % y;
System.out.println(Math.pow(x,y));
double z = Math.sqrt(Math.pow(3+2,y));
System.out.println(z+" "+a);
```

| Memory | Output |
|---|---|
| x=3<br>y=2<br>a=1<br>z=5 | 9.0<br>5.0 1 |

e.

```
double avg = 76.345;
int avg2;
avg = Math.round(avg);
avg2 = Math.ceil(avg);
```

| Memory | Output |
|---|---|
| | Exception in thread "main" java.lang.Error: Unresolved compilation problem:<br>Type mismatch: cannot convert from double to int<br><br>at Question1.main(Question1.java:40) |

f.

```
double mark1 = 80.5;
double mark2 = 77.5;
double mark3 = 85;
double mark4 = 70.2;
double average = ((mark1+mark2+mark3+mark4)/4);
System.out.println(Math.ceil(average));
System.out.println(Math.floor(average));
double high, low;
low = Math.min(mark1, mark2);
high =
Math.max(Math.max(Math.max(mark1,mark2),mark3),mark4);
System.out.println(low + " " + high);
```

| Memory | Output |
|---|---|
| Mark1=80.5<br>Mark2=77.5<br>Mark3=85.0<br>Mark4=70.2<br>Average78.3<br>Low=77.5<br>High=85.0 | 79.0<br>78.0<br>77.5  85.0 |

g.

```
double place = 0.01;
double unrounded = 3.14159;
double result = Math.round(unrounded/place)*place;
System.out.println(result);
```

| Memory | Output |
|---|---|
| Place=0.01<br>Unrounded=3.14159<br>Result=3.14 | 3.14 |

h.

```
String num = "3.14159";
double place = 0.01;
double result = Math.round(num/place)*place;
System.out.println(result);
```

| Memory | Output |
|---|---|
| | Exception in thread "main"<br>java.lang.Error: Unresolved compilation problem:<br>The operator / is undefined for the argument type(s) String, double<br><br>at<br>Question1.main(Question1.java:64) |

2. Trace Trough the following question for the given input.

```
double price;
Scanner s = new Scanner(System.in);
System.out.println("Enter Price");
price = s.nextDouble();
price = price * 1.13;
System.out.println("Pice with tax is:" + price);
```

a. Price is entered as -10

| Memory | Output |
|---|---|
| Price=-10, -11.3 | Pice with tax is : -11.299999999999999 |

b. Price is entered as 0

| Memory | Output |
|---|---|
| Price=0,0 | Pice with tax is : 0.0 |

c. Price is entered as 5.25

| Memory | Output |
|---|---|
| Price=5.25,5.9325 | Pice with tax is : 5.932499999999999 |

d. Price is entered as “twelve”

| Memory | Output |
|---|---|
| | Exception in thread "main" java.util.InputMismatchException<br>at java.util.Scanner.throwFor(Unknown Source)<br>at java.util.Scanner.next(Unknown Source)<br>at java.util.Scanner.nextDouble(Unknown Source)<br>at Question2.main(Question2.java:9) |