

# Function Worksheet

If there are no errors in the program, show what will be printed by each of the following programs. If there are any errors in the program explain what is wrong.

```
1. public static void main(String args[]) {
    int a,b;
    a = 3;
    b = 4;
    System.out.println(three(a,b));
}
public static int three(int x, int y) {
    int a;
    a = x + y;
    return a;
}
```

7

```
2. public static void main(String args[]) {
    int f;
    f = 1;
    for (int i = 1 ; i < 5 ; i++) {
        f = three(i,f);
        System.out.println(f);
    }
}
public static int three(int a, int b) {
    int z;
    z = a + a * b;
    return z;
}
```

2

6

21

88

3. Write a function that returns the cost of mailing a package,

given

the weight of the package in pounds and ounces, and a cost per ounce. Recall that there are 16 ounces in a pound. ("given" means that these values will be passed to the function as parameters)

```
import java.util.Scanner;
```

```
public class Worksheet {  
    public double mailpackage(double weight, double cost) {  
        return weight * cost;  
    }  
  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
        System.out.print("Do you wish to proceed in pounds (1) or ounces (2): ");  
        double ounces = 0;  
        double ounceprice = 0;  
        int choice = scanner.nextInt();  
  
        if (choice == 1) {  
            System.out.print("Enter the weight of the package: ");  
            double pound = scanner.nextDouble();  
            ounces = pound * 16;  
  
            System.out.print("Enter the cost per pound: ");  
            double poundprice = scanner.nextDouble();  
            ounceprice = poundprice * 16;  
        } else {  
            System.out.print("Enter the weight in ounces: ");  
            ounces = scanner.nextDouble();  
  
            System.out.print("Enter the cost per ounce: ");  
            ounceprice = scanner.nextDouble();  
        }  
  
        Worksheet worksheet = new Worksheet();  
        System.out.println(worksheet.mailpackage(ounces, ounceprice));  
    }  
}
```

4. Write the statements to read in the weight of a package (in pounds and ounces), and the cost per ounce for mailing. Then call your function to calculate the mailing cost, and print the mailing cost.

```
import java.util.Scanner;
```

```
public class Worksheet {  
    public double mailpackage(double weight, double cost) {  
        return weight * cost;  
    }  
  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
        System.out.print("Do you wish to proceed in pounds (1) or ounces (2): ");  
        double ounces = 0;  
        double ounceprice = 0;  
        int choice = scanner.nextInt();  
  
        if (choice == 1) {  
            System.out.print("Enter the weight of the package: ");  
            double pound = scanner.nextDouble();  
            ounces = pound * 16;  
  
            System.out.print("Enter the cost per pound: ");  
            double poundprice = scanner.nextDouble();  
            ounceprice = poundprice * 16;  
        } else {  
            System.out.print("Enter the weight in ounces: ");  
            ounces = scanner.nextDouble();  
  
            System.out.print("Enter the cost per ounce: ");  
            ounceprice = scanner.nextDouble();  
        }  
  
        Worksheet worksheet = new Worksheet();  
        System.out.println(worksheet.mailpackage(ounces, ounceprice));  
    }  
}
```

5. Write a function `checkeven` which receives 3 integer variables and prints YES if all three numbers are even. Otherwise the function prints NO. ("receives" means that these values will be passed to the function as parameters)

```
import java.util.Scanner;

public class Methods {
    public boolean checkEven(int x, int y, int z) {
        if(x % 2 == 0 && y % 2 == 0 && z % 2 == 0) {
            return true;
        } else {return false;}
    }
    public static void main(String[] args) {
        Methods method = new Methods();
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter your first number: ");
        int firstnum = scanner.nextInt();
        System.out.print("Enter your second number: ");
        int secondnum = scanner.nextInt();
        System.out.print("Enter your third number: ");
        int thirdnum = scanner.nextInt();
        String printline = method.checkEven(firstnum, secondnum, thirdnum) ?
"The entered numbers are even." : "At least one of the entered numbers is not
even";
        System.out.println(printline);
    }
}
```

6. Write the statements to read in three numbers and call the `checkeven` function.

```
import java.util.Scanner;

public class Methods {
    public boolean checkEven(int x, int y, int z) {
        if(x % 2 == 0 && y % 2 == 0 && z % 2 == 0) {
            return true;
        } else {return false;}
    }
    public static void main(String[] args) {
        Methods method = new Methods();
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter your first number: ");
        int firstnum = scanner.nextInt();
        System.out.print("Enter your second number: ");
```

```

        int secondnum = scanner.nextInt();
        System.out.print("Enter your third number: ");
        int thirdnum = scanner.nextInt();
        String printline = method.checkEven(firstnum, secondnum, thirdnum) ?
"The entered numbers are even." : "At least one of the entered numbers is not
even";
        System.out.println(printline);
    }
}

```

7. Write another version of the checkeven function. This version receives 3 integer variables and returns true if all three numbers are even. Otherwise, the function returns false.

```

import java.util.Scanner;
public class Methods {
    public boolean checkEven(int x, int y, int z) {
        if(x % 2 == 0 && y % 2 == 0 && z % 2 == 0) {
            return true;
        } else {return false;}
    }
    public static void main(String[] args) {
        Methods method = new Methods();
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter your first number: ");
        int firstnum = scanner.nextInt();
        System.out.print("Enter your second number: ");
        int secondnum = scanner.nextInt();
        System.out.print("Enter your third number: ");
        int thirdnum = scanner.nextInt();
        String printline = method.checkEven(firstnum, secondnum, thirdnum) ?
"The entered numbers are even." : "At least one of the entered numbers is not
even";
        System.out.println(printline);
    }
}

```

8. Write the statements to read in three numbers and call the new version of the checkeven function. Then print YES if all three numbers were even, or print NO if they were not all even.

```

import java.util.Scanner;
public class Methods {
    public boolean checkEven(int x, int y, int z) {
        if(x % 2 == 0 && y % 2 == 0 && z % 2 == 0) {
            return true;
        } else {return false;}
    }
}

```

```
public static void main(String[] args) {
    Methods method = new Methods();
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter your first number: ");
    int firstnum = scanner.nextInt();
    System.out.print("Enter your second number: ");
    int secondnum = scanner.nextInt();
    System.out.print("Enter your third number: ");
    int thirdnum = scanner.nextInt();
    String printline = method.checkEven(firstnum, secondnum, thirdnum) ?
"The entered numbers are even." : "At least one of the entered numbers is not
even";
    System.out.println(printline);
}
}
```