Solutions:

1. ANSWER

```
/* package whatever; // don't place package name! */

import java.util.*;
import java.lang.*;
import java.io.*;

/* Name of the class has to be "Main" only if the class is public. */
class Point2D{
   int x, y;
   public Point2D(int x, int y){
            this.x = x;
            this.y = y;
            System.out.println("Point2D constructor");
   }
   public String Display(){
            return "x = " + x + ", y = " + y;
   }
}
class Point3D extends Point2D{
   int z;
   Point3D(int x, int y, int z){
            super(x, y);
            this.z = z;
            System.out.println("Point3D constructor");
   }
   public String Display(){
            return super.Display() + ", z = " + z;
   }

}

 class Ideone{
   public static void main(String args[]){
            Point2D p2D = new Point2D(1, 2);
            System.out.println(p2D.Display());

            Point3D p3D = new Point3D(5, 4, 3);
            System.out.println(p3D.Display());

   }
}
```

2. ANSWER

```
public class Myparent {
   private int p;
   public final int myfunction(){
```

```
        return p*p;
    }
    public void set_p(int Q){p = Q;}
   // Write your code here
    public Myparent(int Q){p = Q;}
    public Myparent(){p = 0;}
    public int get_p(){return p;}
}

public class Mychild extends Myparent{
    public Mychild(int K){ super(K); }
  public final int myfunction(){
      return p*p+1;
  }
   // write your code of myroot() that finds the square root of p in class Myparent
    public double myroot(){
        return Math.sqrt(get_p());
    }
   // write other necessary codes here
    public Mychild(){ super(0); }
}
```

3. ANSWER

```
3
1
2
3
1
13
11
```

4. ANSWER

```
public class MyTest {
    public static void main(String[] args) {
        FoodItem x[];
        x = new FoodItem[2]; // It is also ok if one replaces array of objects by two individual objects
        x[0] = new Fish("small");
        x[1] = new Vegetable("Cauliflower");
        ((Fish) x[0]).setparameter();
        ((Vegetable) x[1]).setparameter();
        double p = 0;
        double amount[] = {3, 2};
        for(int i = 0; i < x.length; i++){
            p += x[i].getprice(amount[i]);
        }
        System.out.println("price = " + p);
    }
}
```