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Skill 20.1 Exercise 1

(a) What does it mean to overload a method or constructor?

(b) What is the purpose of overloading in Java?

(c) Does the class shown to the right illustrate overloading? Explain.

```
public MyClass{
    String a;

    MyClass(int a){

        this.a = String.valueOf(a);
    }
    MyClass(double a){

        this.a = String.valueOf(a);
    }
    MyClass(boolean a){

        this.a = String.valueOf(a);
    }
}
```

Skill 20.2 Exercise 1

```
class MyClass {
    int height;
    MyClass() {
        System.out.println("bricks");
        height = 0;
    }
    MyClass(int i) {
        System.out.println("Building a new House that is " + i + " feet tall");
        height = i;
    }
}
```

Refer to the MyClass class above. What is printed when the following is code is executed from the main method of the driver class?

(a) MyClass t = new MyClass(0);

(b) new MyClass();

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Skill 20.02 Exercise 2

Consider the following class definition. Each object of the class `Item` will store the item's name
as `itemName`, the item's regular price, in dollars, as `regPrice`, and the discount that is applied to the
regular price when the item is on sale as `discountPercent`. For example, a discount of 15% is stored
in `discountPercent` as 0.15.

```
public class Item
{
    private String itemName;
    private double regPrice;
    private double discountPercent;
    public Item (String name, double price, double discount)
    {
        itemName = name;
        regPrice = price;
        discountPercent = discount;
    }
    public Item (String name, double price)
    {
        itemName = name;
        regPrice = price;
        discountPercent = 0.25;
    }
    /* Other methods not shown */
}
```

Which of the following code segments, found in a class other than `Item`, can be used to create an item with a
regular price of $10 and a discount of 25% ?

```
  I.    Item b = new Item("blanket", 10.0, 0.25);
 II.    Item b = new Item("blanket", 10.0);
III.    Item b = new Item("blanket", 0.25, 10.0);
```

Skill 20.3: Exercise 1

(a) Does the class shown to the right illustrate overloading? Explain.	```public MyClass{ String a; MyClass(int a){ this.a = String.valueOf(a); } int doSomething(int i){ return i; } String doSomething(int i){ return a; }}```

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Skill 20.3: Exercise 1

A student is writing an interactive drawing program that draws polygons. The Polygon constructor accepts two parameters which indicate the location of the shape on a 2d grid when a Polygon is created. The drawPolygon method draws a different shape depending on the following parameters.

      i.   If two parameters are given, these parameters will represent a different x, y coordinate on the grid and the program will draw a line to this new coordinate

      ii.   If three parameters are given, the program will draw a polygon, where the third parameter indicates the number of sides

      iii.   If four parameters are given, the same polygon in (ii) will be drawn, by the forth parameter will specify a color.

Write the Polygon class below. You need not implement the methods for drawing the shapes indicated in i, ii, or iii

The PolygonMaker class instantiates Polygons. Write the PolygonMaker class. In the class indicate how you would instantiate a Polygon and implement each version of the drawPolygon method.

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