

1.

整型：byte、short、int、long 字符型：char 浮点型：float、double 布尔型：boolean

2.

整型	占用字节数	表示范围
byte	1 (8位)	-128~127
short	2 (16位)	-32768~32767
int	4 (32位)	-2 <sup>31</sup> ~ 2 <sup>31</sup> - 1
long	8 (64位)	-2 <sup>63</sup> ~ 2 <sup>63</sup> - 1

3.

```
int a=4;
char c='0';
int b=a+c;
//请回答这个过程涉及到的是隐式类型转换还是显式类型转换，b的值是多少，为什么会是这个值。
```

char c=后没有(int)，且char存储范围大于int，所以该过程涉及char到int的隐式类型转换。对照ASCII表，可知c被赋为的"0"对应十进制数为48，所以b的值为52。

4. (拓展)

```
Integer x = new Integer(18);
Integer y = new Integer(18);
System.out.println(x == y);

Integer z = Integer.valueOf(18);
Integer k = Integer.valueOf(18);
System.out.println(z == k);

Integer m = Integer.valueOf(300);
Integer p = Integer.valueOf(300);
System.out.println(m == p);
```

输出结果为

```
false
true
```

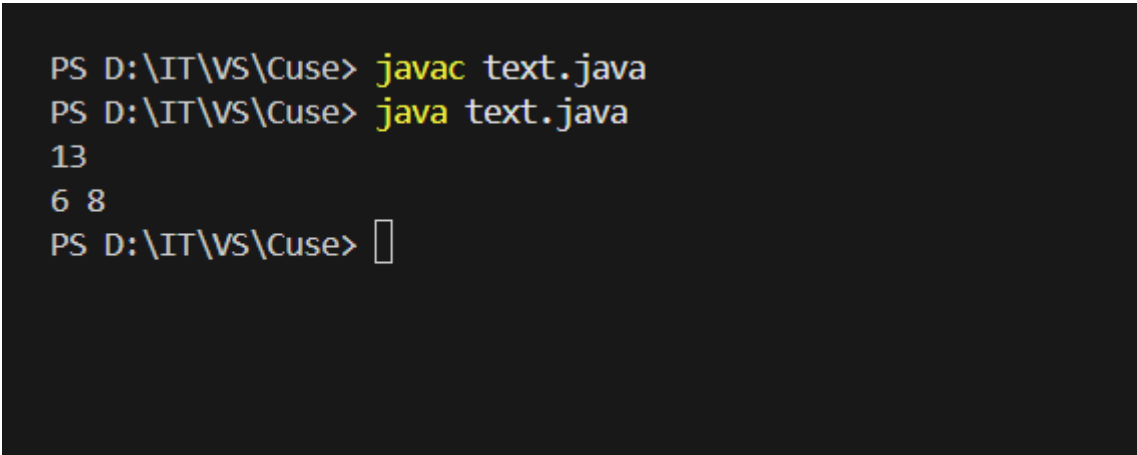
```
false
```

第一段两个new Integer对象不同，`x == y`比较对象引用地址，地址不同，输出false。第二段两个Integer.valueOf引用同一缓存池，`z == k`输出true。第三段也是引用Integer缓存池，但该缓存池范围为-128 到 127，300超出了这个范围，故输出为false。

## 5

编写代码

```
public class text {  
    public static void main(String[] args){  
        int a = 5 ;  
        int b = 7 ;  
        int c = (++a) + (b++);  
        System.out.println( c );  
        System.out.println(a+ " "+b);  
    }  
}
```



```
PS D:\IT\VS\Cuse> javac text.java  
PS D:\IT\VS\Cuse> java text.java  
13  
6 8  
PS D:\IT\VS\Cuse> 
```

运行结果如下

解释过程：赋值a=5，b=7 ++a前缀递增，先对a加1再取新值 ++a=6 b++后缀递增，先用当前值再加1 b++=7 所以运算得c值为6+7=13 此时a=6，b=8 最后打印出结果

## 6

int存储方式为二进制补码，float存储标准为IEEE 754标准

两个正数相加得负数是因为整数超过了数据类型的最大值，导致二进制补码表示的最高位（符号位）被设置为1，从而被解释为负数。

—  
—

## 1

代码如下

```
import java.util.HashMap;
public class text {
    public static void main(String[] args){
        String D = new
String("math:5,English:10,Chinese:10,math:20,English:10,chemistry:30,math:10,math:
20");
        HashMap<String, Integer> G = new HashMap<>();
        String[] PS = D.split(",");
        for(String P:PS){
            String[] Ps = P.split(":");
            String S = Ps[0].trim();
            int V = Integer.parseInt(Ps[1].trim());
            G.put(S, G.getOrDefault(S, 0) + V);
        }
        for(String K : G.keySet()){
            System.out.println(K + ":" + G.get(K));
        }
    }
}
```

```
PS D:\IT\VS\Cuse> javac text.java
PS D:\IT\VS\Cuse> java text.java
chemistry:30
English:20
Chinese:10
math:55
PS D:\IT\VS\Cuse> 
```

输出结果

2

修改代码进行排序

```
import java.util.ArrayList;
import java.util.HashMap;
public class text {
    public static void main(String[] args){
        String D = new
String("math:5,English:10,Chinese:10,math:20,English:10,chemistry:30,math:10,math:
20");
        HashMap<String, Integer> G = new HashMap<>();
        String[] PS = D.split(",");
        for(String P:PS){
            String[] Ps = P.split(":");
            String S = Ps[0].trim();
            int V = Integer.parseInt(Ps[1].trim());
            G.put(S, G.getOrDefault(S, 0) + V);
        }
        ArrayList<HashMap.Entry<String,Integer>> L = new ArrayList<>
(G.entrySet());
```

```

        L.sort((o1,o2)->o2.getValue()-o1.getValue());
        for(HashMap.Entry<String,Integer>E:L){
            System.out.println(E.getKey()+ ":"+E.getValue());
        }
    }
}

```

```

PS D:\IT\VS\Cuse> javac text.java
PS D:\IT\VS\Cuse> java text.java
math:55
chemistry:30
English:20
Chinese:10
PS D:\IT\VS\Cuse> 

```

输出结果

3

修改代码如下

```

import java.util.ArrayList;
import java.util.HashMap;
import java.util.Scanner;
public class text {
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        HashMap<String,Integer> G = new HashMap<>();
        System.out.println("请输入数据: (格式: 科目:数量,科目:数量,...输入RUN结束)");
        while(true){
            String D = sc.nextLine();
            if(D.equals("RUN")){
                break;
            }
            String[] PS = D.split(",");
            for(String P:PS){
                String[] Ps = P.split(":");
                String S = Ps[0].trim();
                int V = Integer.parseInt(Ps[1].trim());
                G.put(S, G.getOrDefault(S, 0) + V);
            }
            ArrayList<HashMap.Entry<String,Integer>> L = new ArrayList<>
(G.entrySet());
            L.sort((o1,o2)->o2.getValue()-o1.getValue());
            for(HashMap.Entry<String,Integer>E:L){
                System.out.println(E.getKey()+ ":"+E.getValue());
            }
        }
        System.out.println("最终结果: ");
        ArrayList<HashMap.Entry<String,Integer>> L = new ArrayList<>
(G.entrySet());
        L.sort((o1,o2)->o2.getValue()-o1.getValue());
    }
}

```

```
        for(HashMap.Entry<String,Integer>E:L){
            System.out.println(E.getKey()+ ":"+E.getValue());
        }
        sc.close();
    }
}
```

### 运行过程

```
PS D:\IT\VS\Cuse> javac text.java
PS D:\IT\VS\Cuse> java text.java
请输入数据: (格式: 科目:数量,科目:数量,...输入RUN结束)
math:5,English:10,Chinese:10,math:20,English:10,chemistry:30,math:10,math:20
math:55
chemistry:30
English:20
Chinese:10
math:5,English:10,Chinese:10,math:20,English:10,chemistry:30,math:10,math:20
math:110
chemistry:60
English:40
Chinese:20
RUN
最终结果:
math:110
chemistry:60
English:40
Chinese:20
PS D:\IT\VS\Cuse> |
```

## 4

修改代码如下

```
import java.util.ArrayList;
import java.util.HashMap;
import java.util.Scanner;
public class text {
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        HashMap<String,Integer> M = new HashMap<>();
        HashMap<String,Integer> H = new HashMap<>();
        System.out.println("请输入1/2(1-小明2-小红),输入RUN结束");
        while(true){
            String St = sc.nextLine().trim();
            if(St.equals("RUN")){
                break;
            }
            HashMap<String,Integer> G;
            if(St.equals("1")){
                G = M;
                St = "小明";
            }
        }
    }
}
```

```

        }else if(St.equals("2")){
            G = H;
            St = "小红";
        }else{
            System.out.println("输入错误, 请重新输入");
            continue;
        }
        System.out.println("请输入错题(题目:分值,题目:分值),输入RUN结束");
        String D = sc.nextLine();
        if(D.equals("RUN")){
            System.out.println("返回学生选择");
            continue;
        }
        String[] PS = D.split(",");
        for(String P:PS){
            String[] Ps = P.split(":");
            String S = Ps[0].trim();
            int V = Integer.parseInt(Ps[1].trim());
            G.put(S, G.getOrDefault(S, 0) + V);
        }
        System.out.println(St + "当前结果: ");
        ArrayList<HashMap.Entry<String,Integer>> L = new ArrayList<>
(G.entrySet());
        L.sort((o1,o2)->o2.getValue()-o1.getValue());
        for(HashMap.Entry<String,Integer>E:L){
            System.out.println(E.getKey()+ ":"+E.getValue());
        }
        System.out.println("请输入1/2(1-小明2-小红),输入RUN结束");
    }
    System.out.println("最终结果");
    System.out.println("小明:");
    ArrayList<HashMap.Entry<String,Integer>> M1 = new ArrayList<>
(M.entrySet());
    M1.sort((o1,o2)->o2.getValue()-o1.getValue());
    for(HashMap.Entry<String,Integer>E:M1){
        System.out.println(E.getKey()+ ":"+E.getValue());
    }
    System.out.println("\n小红:");
    ArrayList<HashMap.Entry<String,Integer>> H1 = new ArrayList<>
(H.entrySet());
    H1.sort((o1,o2)->o2.getValue()-o1.getValue());
    for(HashMap.Entry<String,Integer>E:H1){
        System.out.println(E.getKey()+ ":"+E.getValue());
    }
    sc.close();
}
}

```

## 运行过程

```
请输入1/2(1-小明2-小红),输入RUN结束
1
请输入错题(题目:分值,题目:分值),输入RUN结束)
math:5,English:10,Chinese:10,math:20,English:10,chemistry:30,math:10,math:20
小明当前结果:
math:55
chemistry:30
English:20
Chinese:10
请输入1/2(1-小明2-小红),输入RUN结束
1
请输入错题(题目:分值,题目:分值),输入RUN结束)
math:5,English:10,Chinese:10,math:20,English:10,chemistry:30,math:10,math:20
小明当前结果:
math:110
chemistry:60
English:40
Chinese:20
请输入1/2(1-小明2-小红),输入RUN结束
2
请输入错题(题目:分值,题目:分值),输入RUN结束)
math:5,English:10,Chinese:10,math:20,English:10,chemistry:30,math:10,math:20
小红当前结果:
math:55
chemistry:30
English:20
Chinese:10
请输入1/2(1-小明2-小红),输入RUN结束
RUN
最终结果
小明:
math:110
chemistry:60
English:40
Chinese:20

小红:
math:55
chemistry:30
English:20
Chinese:10
```