

## WORKSHEET A3.1

### Data Types

1. State whether the following are legal identifiers in Java. If they are not legal, indicate why.
  - a. number
  - b. 5number
  - c. thisNumber
  - d. that\_number
  - e. big number
  - f. char
  - g. character
2. State whether the following are legal declarations and initializations of identifiers. If they are not legal, indicate how to correct them.
  - a. **int** num1 = 8;
  - b. **int** num2 = 7.6;
  - c. **float** num3 = 5;
  - d. **float** num4 = 5.9;
  - e. **float** num5 = 4.34e5;
  - f. **char** ch1 = 'v';
  - g. **char** ch2 = 84;
  - h. **double** num6 = 78456;
  - i. **double** num7 = 23,567;
  - j. **double** num8 = \$123.68;
  - k. **long** num9 = 28;
3. Use the ASCII chart in Handout A3.2 to find the output of the following code:

```
char letter1 = 'J';  
char letter2 = 'a';  
char letter3 = 'v';  
char letter4 = 'a';
```

```
System.out.print("The letters of the word ");  
System.out.print(letter1);  
System.out.print(letter2);  
System.out.print(letter3);  
System.out.println(letter4);  
System.out.print("have ASCII positions ");  
System.out.print((int)letter1 + ", ");  
System.out.print((int)letter2 + ", ");
```

```
System.out.print((int)letter3 + " and ");  
System.out.println((int)letter4);
```

4. Determine the exact output to the following code segment:

```
int sum1 = 10+5;  
double sum2 = 10+5.0;  
int quotient1 = 15/4;  
double quotient2 = 15/4;  
double quotient3 = 15/4.0;  
int remainder1 = 15 % 4;  
double remainder2 = 17.84 % 2.3;  
  
System.out.println("10+5 is " + sum1);  
System.out.println("10+5.0 is " + sum2);  
System.out.println("15/4 is " + quotient1);  
System.out.println("15/4 is " + quotient2);  
System.out.println("15/4.0 is " + quotient3);  
System.out.println("15 % 4 is " + remainder1);  
System.out.println("17.84 % 2.3 is " + remainder2);
```