

CS 101: Practice Questions for Test 1

1. Write a Java application which prompts the user to enter 15 integers, then computes the sum, and then prints the sum to the screen.
2. Recall the Pythagorean Theorem says that if a, b are the lengths of two edges of a right triangle, then the length of the hypotenuse c is given by

$$c^2 = a^2 + b^2.$$

Write a Java application which prompts the user to enter the lengths of two edges of a right triangle and then computes the length of the hypotenuse.

3. What is the output of the following code fragment?

```
int x = 1;
while (x<5){
    System.out.println(x);
    if (x==3)
        x++;
    else
        x = x+2;
}
```

4. What is the output of the following code fragment?

```
for (int j=1; j<=5; j++){
    for (int i=1; i<=4; i++)
        System.out.print("x");
    System.out.println();
}
```

5. Which of the following are valid Java identifiers?

```
XBox
$3t4
hop-toad
if
2ndFloor
MyGoodness
```

6. What is the output?

```
public class EnumerateSeasons{
    enum Season{Spring,Summer,Fall,Winter}
    public static void main(String[] args){
        Season s = Season.Spring, t = Season.Winter;
        System.out.println(s.name());
        System.out.println(t.ordinal());
    }
}
```

7. The Java compiler produces

- (a) Java bytecode
- (b) machine language
- (c) assembly language
- (d) an iterated list
- (e) an html file

8. A byte is

- (a) 256 bits
- (b) 4 bits
- (c) 8 bits
- (d) approximately 1000000 bits
- (e) 1/8 of a bit

9. The Java expression

$5/2+3$

evaluates to

- (a) 1
- (b) 5
- (c) 5.5
- (d) 0

- (e) none of the above
10. Which of the following is part of the hardware of a computer system?
- (a) operating system
 - (b) compiler
 - (c) interpreter
 - (d) bus
 - (e) bytecode
11. Write a Java expression which represents the floating-point constant two thirds.
12. If `x` and `y` are Java variables of type `double`, write the Java code for the mathematical expression

$$\frac{x^2 + 2}{3y - 5}$$

13. Write a Java application which rolls two standard dice (generates two random integers from 1 to 6), and prints out their sum.
14. For each of the following pairs, which represents a class and which represents an object of that class?
- (a) Celebrity, Britney Spears
 - (b) Mickey Mouse, Rodent
 - (c) Author, William Shakespeare
 - (d) Sport, Baseball
15. Assume `n` is a Java variable of type `int`. Write a code fragment to print to the screen `positive` if `n` is positive, `zero` if `n` is zero, and `negative` if `n` is negative.
16. Compute the Java expression `15%6 + 9`.