AP Computer Science
Chapter 2 Homework #2

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Date: _____ Period: _____

1. List the following in order from smallest data type to largest data type based on the kind of numbers that can be stored.

`byte`, `double`, `float`, `int`, `long`, `short`

byte, short, int, long, float, double

2. Which of the following data types require the same amount of memory?

`byte`, `double`, `float`, `int`, `long`, `short`

double and long

3. Show the result for each of the following:

a. `17 / 9` 1

b. `17 % 9` 8

c. `56 % 6` 2

d. `-34 / 5` -6

e. `-34 % 5` -4

f. `-34 / -5` -6

g `-34 % -5` -4

4. If today is Tuesday, what will be the day in 100 days?

Thursday

5. What is the result of `25 / 4`? How would you rewrite the expression if you wished the result to be a floating-point number?

6.25 – 25.0 / 4.0

6. Write a statement to display the result of $5^{19.5}$.

```
double num = Math.pow(5, 19.5);
System.out.println(num);
```

7. Which of the following are correct literals for floating-point numbers?

```
12.3
12.3E+2
23.4e-2
-33.4
20.5
```

8. Which of the following are the same as 52.534?

```
5.2534E+1
0.52534e+2
525.34e-1
5.2534E-0
```

9. What are overflow and underflow errors? When do they occur?

Overflow is when a variable is assigned a value that is too large (in size) to be stored
Underflow is when a floating point number is too small (too close to zero) to be stored