

**Question 1**

- (1) double x;
- (2) x = 42.3;
- (3) x += 5.9;
- (4) x = Math.sqrt(x);
- (5) int y = (int) x;
- (6) theta = Math.toRandom(theta);
- (7) double[] a;
- (8) a = new double[100];
- (9) a[42] = Math.PI; OR a[42] = 3.1415;
- (10) a[39] = Math.random();

**Question 2:**

```
int temp = x;
x = y;
y = temp;
```

**Question 3:**

```
int[] x = new int[N];
for (int i = 0; i < N; i++)
    x[i] = (int) (10 + Math.random() * (10000 - 10 + 1));
```

**Question 4:**

- (a) x.length - 1 times OR N - 1 times
- (b) After the loop r will contain the smallest value in x[ ].

**Question 5:**

<pre>int max = Math.max(x, y); max = Math.max(max, z);</pre>		<pre>int max = x; if (y &gt; max)     max = y; if (z &gt; max)     max = z;</pre>
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**Question 6:**

```
while (a != b) {
    if (a > b)
        a = a - b;
    else
        b = b - a;
}
```

**Question 7:**

- ( 0, 1, 1)
- ( 0, 2, 2)
- ( 0, 3, 3)
- ( 0, 4, 4)

```
( 1, 2, 3)
( 1, 3, 4)
( 1, 4, 5)
( 2, 3, 5)
( 2, 4, 6)
( 3, 4, 7)
```

**Question 8:**

```
public class Question8 {
    public static void main(String[] args) {
        for (int i = 1; i <= 20; i = i + 2) {
            // Compute 3^i
            long p = (int) Math.pow(3, i);
            // Output i, 3^i
            System.out.println(i + "\t" + p);
        }
    } // main()
} // Question8
```

**Question 9:**

```
public class LuckySeven {
    public static void main(String[] args) {
        int N = Integer.parseInt(args[0]);

        int count = 0;

        for (int i = 1; i <= N; i++) { // Do a trial
            // Toss two dice
            int dice1 = (int) (1 + Math.random() * 6);
            int dice2 = (int) (1 + Math.random() * 6);

            // Is the sum = 7?
            if (dice1 + dice2 == 7)
                count++;
        }
        double p = ((double) count) / N * 100;
        System.out.println("The probability of obtaining a 7 in " + N +
            " trials is " + p + "%");
    } // main()
} // LuckySeven
```