Code with randomness

1. Write an app that prints either 1 or 2, both with probability 0.5.

```
public class OneOrTwo {
  public static void main(String[] args) {
    Random random = new Random();









  }
}
```

2. Write an app that prints 1, 2, 3, or 4, each with probability 0.25.

```
public class OneTwoThreeFour {
  public static void main(String[] args) {
    Random random = new Random();









  }
}
```

3. Write an app that prints any integer, each with positive but not necessarily equal probability.

```
public class AnyInteger {
  public static void main(String[] args) {
    Random random = new Random();









  }
}
```

4. Consider

```
0: new
3: dup
4: invokespecial
7: astore_1
8: aload_1
9: invokevirtual
12: ifeq
15: getstatic
18: ldc
20: invokevirtual
23: goto
26: getstatic
29: ldc
31: invokevirtual
34: return
```

Draw the state-transition diagram.