

Math.random()

random

```
public static double random()
```

Returns a double value with a positive sign, greater than or equal to 0.0 and less than 1.0. Returned values are chosen pseudorandomly with (approximately) uniform distribution from that range.

$$0.0 \leq \text{output} < 1.0$$

```
final int NUMBER_OF_RESPONSES = 4;  
double r = Math.random();  
int whichResponse = (int) (r * NUMBER_OF_RESPONSES);
```

$$0.0 \leq r < 1.0$$

$$0.0 \leq 4 * r < 4.0$$

$$(int) \quad 0 \leq \text{whichResponse} < 4$$

whichResponse must be
0, 1, 2, or 3

```
private String getRandomResponse ()
{
    Random r = new Random ();
    return randomResponses [r.nextInt(randomResponses.length)];
}
```

array knows how

0 how many

entries it has.

```
private String [] randomResponses = {"Interesting, tell me more",
1 "Hmmm.",
2 "Do you really think so?",
3 "You don't say.",
};
```

randomResponses [3]

means the response

with index = 3

```
double r = Math.random();
int whichResponse =
(int)(r * randomResponses.length);
```

```
return randomResponses[whichResponse];
```

if there are 4 responses,
whichResponse will be
0, 1, 2, or 3

if there are 8 responses,
whichResponse will be
0, 1, 2, 3, 4, 5, 6, or 7

Possible Test Question:
produce a random
int value between
0 and 13, inclusive.

```
double r = Math.random();  
int value = (int)(r * 14);
```

Possible Test Question:
produce a random
int value between
12 and 30, inclusive.