Math Class Methods and Strings

AP Computer Science

State the set of possible values for x after each of the following statements.

1. x = 3\*Math.random(); [0,3.0) real
2. x = 5\*Math.random()+8; [8,13) real
3. x = 10\*Math.random()-7; [-7,3) real
4. x = (int) (8\*Math.random()); 0 to 7 inclusive integer
5. x = (int) (Math.random()); 0
6. x = (int) (7\*Math.random()) + 11; 11 to 17 inclusive integer
7. x = (int) (2\*Math.random()); 0,1
8. x = (int) (3\*Math.random()) + 2; 2 to 4 inclusive integer

Write the code to generate the following random numbers.

1. A random real number in [0,5.0). 5\*Math.random()
2. A random real number in [3,13.0). 10\*Math.random()+3
3. A random real number in [7,16.0). 9\*Math.random()+7
4. A random integer from 0 to 12 inclusive. (int) (13\*Math.random())
5. A random integer from 3 to 17 inclusive. (int) (15\*Math.random()) + 3
6. A random integer in the set {0,1}. (int) (2\*Math.random())
7. A random integer in the set {0,4,8,12}. 4\*(int) (4\*Math.random()) {0,1,2,3}
8. A random integer in the set {2,7,12}. 5\*(int) (3\*Math.random())+2 {0,5,10}

Evaluate the following expressions.

1. Math.abs(-1.23)= 1.23
2. Math.abs(10)=10
3. Math.pow(2, 3) =8.0
4. Math.round(3.15) = 3
5. Math.sqrt(9.0) =3.0
6. Math.sqrt(25) =5.0
7. Math.max(3,8) =8
8. Math.min(-2,-6) =-6
9. Math.round(Math.PI) =3
10. Math.round(Math.E) =3
11. Math.abs(Math.min(-7, -3)) =7