

Unit 2 Review #2

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1. Write one line each to find the absolute value of x, the square root of x, and the 20th power of x:

```
int x = scan.nextInt();
double absx = Math.abs(x);
double sqrx = Math.sqrt(x);
double powerx = Math.pow(x, 20);
```

2. Given integers a and b where a is less than b, write an expression that stores a random integer between a and b inclusive into n:

```
int n = (int)(Math.random() * (b - a + 1)) + a;
```

3. What is printed?

```
String str = "starts";
System.out.println(str.length());
```

6

4. What is printed?

```
String str = "starts";
System.out.println(str.indexOf("t"));
```

1

5. What is printed?

```
String str = "012345";
System.out.println(str.substring(3));
```

rts

6. What is printed?

```
String str = "starts";
System.out.println(str.substring(1, 3));
```

ta

7. Complete the following method which is meant to return a String in "title" case, that is with the first character uppercase and the rest of the String lowercase. Assume the String has 2 or more characters. Examples: sending over "spooky" returns "Spooky" and sending "CAT" returns "Cat". Use a return call. Do not use a print call.

```
public String titleCase(String str)
{
    String first = str.substring(0, 1).toUpperCase();
    String theRest = str.substring(1).toLowerCase();
    return first + theRest;
}
```

8. Complete the following method which is meant to return a random letter from the second half of the given word. Assume the String has 2 or more characters. Use a return call. Do not use a print call.

```
public String randomFromSecondHalf(String str)
{
    int mid = str.length() / 2;
    int end = str.length() - 1;
    int r = (int)(Math.random() * (end - mid + 1)) + mid;
    return str.substring(r, r + 1);
}
```

(continued on back)

Questions 9 through 14 use this class:

```
public class CTXXV
{
    private int ctx;

    public CTXXV()
    {
        ctx = 40;
    }

    public void doIt()
    {
        ctx++;
    }

    public void doIt(int n)
    {
        ctx+=n;
    }

    public int get_ctx()
    {
        return ctx;
    }
}
```

9. Write a line of code that creates a new CTXXV object named "acx":

`CTXXV acx = new CTXXV();`

10. Write a line of code that makes calls the doIt() method on acx.

`acx.doIt();`

11. Write a line of code that makes calls the doIt(int n) method on acx with 7.

`acx.doIt(7);`

12. Write a line of code the calls get_ctx().

`System.out.println(acx.get_ctx());`

13. What would be printed if we execute this call: `System.out.println(acx.get_ctx());` ?

48

14. Could we add another constructor like the following? Why or why not?

```
public CTXXV(int n)
{
    ctx = n;
}
```

yes, there was only one constructor that had no arguments, so this one would work fine

15. Could we add another method like the following? Why or why not?

```
public void doIt(int r)
{
    ctx+=(int) (Math.random()*r);
}
```

No, we already have a doIt() method with an integer argument, so that signature is already taken.

16. What is printed?

```
String str = "Whassup?";
System.out.println(str.substring(str.length()-3));
```

up?

17. What is printed?

```
String str = "01234567Whassup?";
System.out.println(str.substring(2, str.length()-3));
```

ass (oops, haha)