BJP5 Exercise 2.1: displacement

Language/Type: Java basics escape sequences println
Author: Marty Stepp (on 2019/09/19)

In physics, a common useful equation for finding the position *s* of a body in linear motion at a given time *t*, based on its initial position s_0, initial velocity v_0, and rate of acceleration *a*, is the following:

$s = s_0 + v_0 t + \frac{1}{2} at^2$

Write code to declare variables for s_0 with a value of 12.0, v_0 with a value of 3.5, *a* with a value of 9.8, and *t* with a value of 10, and then write the code to compute *s* on the basis of these values. At the end of your code, print the value of your variable *s* to the console.

Type your solution here:

```
1 double so = 12.0;
2 double vo = 3.5;
3 double a = 9.8;
4 int t = 10;
5
6 double s = so + (vo * t) + (0.5 * a * (t * t));
7 System.out.println(s);
```

This problem asks for **bare code.** Submit a fragment of Java code as described. Do not write any class or method heading around your code; just write the lines of code that will produce the result described.

4 Indent

Sound F/X
Highlighting

Submit

You passed 1 of 1 tests.

Go to the next problem: loopSquares

test #1:	`output`
console output:	`537.0`
result:	pass

BJP5 Exercise 3.12: scientific

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Language/Type: Java Math method basics parameters return
Author: Marty Stepp (on 2019/09/19)

Write a method called `scientific` that accepts two real numbers as parameters for a base and an exponent and computes the base times 10 to the exponent, as seen in scientific notation. For example, the call of `scientific(6.23, 5.0)` would return `623000.0` and the call of `scientific(1.9, -2.0)` would return `0.019`.

Type your solution here:

```
1 public static double scientific(double b, double e){
2     double s = b * Math.pow(10, e);
3     return s;
4
5 }
```

This is a **method problem.** Write a Java method as described. Do not write a complete program or class; just the method(s) above.

4 Indent

Submit

Sound F/X
Highlighting

You passed 5 of 5 tests.

Go to the next problem: pay

test #1:	`scientific(6.23, 5)`
return:	`623000.0`
result:	pass
test #2:	`scientific(1.9, -2)`
return:	`0.019`
result:	pass
test #3:	`scientific(4.0, 0)`
return:	`4.0`
result:	pass
test #4:	`scientific(8.0, 2)`
return:	`800.0`
result:	pass
test #5:	`scientific(3.14159, 6)`
return:	`3141590.0`
result:	pass

Show Header

BJP5 Exercise 3.14: cylinderSurfaceArea

Language/Type: Java Math method basics parameters return
Author: Marty Stepp (on 2019/09/19)

Write a method called `cylinderSurfaceArea` that accepts a radius and height (both real numbers) as parameters and returns the surface area of a cylinder with those dimensions. For example, the call `cylinderSurfaceArea(3.0, 4.5)` should return `141.3716694115407`. The formula for the surface area of a cylinder with radius *r* and height *h* is the following:

surface area = $2\pi r^2 + 2\pi rh$

Type your solution here:

```
1 public static double cylinderSurfaceArea(double r, double h){
2     double x = Math.PI;
3     double surfaceArea = (2 * x * (r * r)) + (2 * x * r * h);
4
5     return surfaceArea;
6 }
```

This is a **method problem.** Write a Java method as described. Do not write a complete program or class; just the method(s) above.

4 Indent

Submit

Sound F/X
Highlighting

You passed 4 of 4 tests.

Go to the next problem: sphereVolume

test #1:	`cylinderSurfaceArea(3.0, 4.5)`
return:	`141.3716694115407`
result:	pass
test #2:	`cylinderSurfaceArea(2.0, 11.25)`
return:	`166.50441064025904`
result:	pass
test #3:	`cylinderSurfaceArea(8.75, 4.125)`
return:	`707.8400947619502`
result:	pass
test #4:	`cylinderSurfaceArea(0, 0)`
return:	`0.0`
result:	pass