



LAB
01.04



Instructions:

- Open **01.04-Lab.html** in your Editor. Write the Lab code in the **script** tags.

1. Set the **y** value to produce console output that matches the comment:

```
// Example:
let x = 20;
let y;

// y = ?;
console.log(x + y); // 23

// Solution:
x = 20;
y = 3;
console.log(x + y); // 23

// On your own:
x = 10;
y;

// y = ?;
console.log(x + y); // -10

// y = ?;
console.log(x - y); // -10

// y = ?;
console.log(x * y); // 2.5

// y = ?;
console.log(x / y); // 2.5

// y = ?;
console.log(x ** y); // 100000

// y = ?;
console.log(x % y); // 1
```

2. Calculate the total cost, as shown in the comment:

```
let unitCost = 50;
let numUnits = 12;
let shipping = 25;
let totalCost;
console.log(totalCost); // 625
```

3. Calculate the values of z in terms of w, x and y to get the value shown in the comment:

```
let w = 10;
x = 12;
y = 15;
let z;
console.log(z); // 190
console.log(z); // 105
console.log(z); // 18
console.log(z); // 8
console.log(z); // 7
```

4. Use the Math Object to generate a random integer between 10-19;
5. Use the Math Object to generate a random integer between 26-50;
6. Use the Math Object to get the maximum value from these numbers: 3, 5, 21, 7, 1, 3, 12, 6
7. Use the Math Object to get the square root of 81.
8. Use a Math Object method that takes 9.9999 as its argument and returns 9.
9. Supply values for x, y and expon so that the console.log output matches the comment next to it:

```
x;
y;
let expon;
console.log(expon); // 196
```

10. The area of a circle equals PI times the radius squared: $A = \pi r^2$.
Given a circle of radius 4, use the Math Object to find the area of the circle.
11. The hypotenuse (c) of a right triangle is obtained by the formula: $a^2 + b^2 = c^2$, where a and b are the other two sides. Using the Math Object, find the hypotenuse of a triangle, where a=5 and b=12.
12. Generate two random floats, r1 and r2, in the 0-10 range. Round each of them off to 5 decimal places. Add them together. HINTS: You cannot do addition with strings. Use the Number() method to convert strings to numbers.
13. Given this baseball player and his statistics:

Player: Vladimir Guerrero Jr. Team: Toronto Blue Jays Year: 2021

Stats: PA AB R H 2B 3B HR RBI 698 604 123 188 29 1 48 111

Calculate Guerrero's Slugging Percentage (SLG), which equals total bases (TB) divided by at bats (AB): $SLG = TB / AB$

Total bases is the sum of a player's hits (H), plus their doubles (2B), plus twice their triples (3B), plus three times their home runs (HR): $TB = H + 2B + (3B * 2) + (HR * 3)$

EXAMPLE / HINT (but only if you need it)

A player has 100 hits, including 17 2B, 4 3B and 19 HR, they have 182 TB: $100 + 17 + (4 * 2) + (19 * 3) = 100 + 17 + 8 + 57 = 182$

It took the player 350 AB to amass these 182 TB. Therefore, they have a slugging percentage of 0.520: $182 / 350 = 0.52$

- **END Lab 01.04**
- **SEE Lab 01.04 Solution**