

# 01

## Exercise

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- Operator
- Statement

1. What is the value of y after evaluating the expression given below?
  - `y+=++y + y-- + --y;` when let `y=8`
2. Give the output of the following expression:
  - `a+=a++ + ++a + --a + a--;` when `a=7`
3. If let `y=10` then find:
  - `z=(++y * (y++ +5));`
4. What are the values of x and y when the following statements are executed?

`let a = 63, b = 36;`

`let x = (a < b) ? true : false;`

`let y= (a > b) ? a : b;`

5. Name the operators listed below:

○ i. `<`

ii. `++`

iii. `&&`

iv. `?:`

6. Write a program to average of 36, 45 and 53 using variables

```
function main()  
{  
  let a=36,b=45,c=53;  
  let av;  
  av=(a+b+c)/3;  
  console.log("Average="+av);  
}
```

7. Write a program to input the Principal, Rate and Time and calculate the Simple Interest.

○ 
$$\text{Simple Interest} = \frac{(\text{Principal} * \text{Rate} * \text{Time})}{100}$$

```
function main()
{
    let p,r,t,si;
    console.log("Enter the principal, rate and time:");
    p=prompt('Enter the principal');
    r=prompt('Enter the Rate');
    t=prompt('Enter the Duration');
    si=(p*r*t)/100;
    console.log("Simple Interest="+si);
}
```

8. State the difference between == and ===.
9. Convert the following if else if construct into switch case

```
if (var==1)
    console.log("good");
else if (var==2)
    console.log("better");
else if (var==3)
    console.log("best");
else
    console.log("invalid");
```

○

```
switch (var)
{
    case 1:
        console.log("good");
        break;
    case 2:
        console.log("better");
        break;
    case 3:
        console.log("best");
        break;
    default:
        console.log("invalid");
}
```

○

10. Write a program to accept a mark obtained by a student in computer science and print the grades accordingly:

Marks	Grade
Above 90	A
70 to 89	B
50 to 69	C
below 50	D

○

```
function main()
{
let c;
console.log("Enter marks in Computer science:");
c=sc.nextlet();
if(c>=90)
console.log("Grade=A");
else if(c>=70 && c<90)
console.log("Grade=B");
else if(c>=50 && c<70)
console.log("Grade=C");
else
console.log("Grade=D");
}
```

○

11. A cloth showroom has announced the following festival discounts on the purchase of items, based on the total cost of the items purchased:

Total Cost	Discount (in Percentage)
Less than ₹2000	5%
₹2001 to ₹5000	25%
₹5001 to ₹10000	35%
Above ₹10000	50%

Write a program to input the total cost and compute and display the amount to be paid by the customer after availing the discount.

```
function main()
{
    let tc,d,ap;
    console.log("Enter the total cost of the items:");
    tc=prompt('Enter Cost');
    if(tc<=2000)
    d=5/100f*tc;
    else if(tc>=2001 && tc<=5000)
    d=25/100f*tc;
    else if(tc>=5001 && tc<=10000)
    d=35/100f*tc;
    else
    d=50/100f*tc;
    ap=tc-d;
    console.log("Amount Payable:"+ap);
}
```

12. An electronics shop has announced the following seasonal discounts on the purchase of certain items.

Purchase Amount is ₹	Discount on Laptop	Discount on desktop PC
0–2500	0.0%	5.0%
25001 – 57000	5.0%	7.5%
57001 – 100000	7.5%	10.0%
More than 100000	10.0%	15.0%

Write a program based on the above criteria, to input name, address, amount of purchase and the type of purchase (L for Laptop and D for Desktop) by a customer. Compute and print the net amount to be paid by a customer along with his name and address.

(Hint: discount = (discount rate/100)\* amount of purchase

Net amount = amount of purchase – discount)

13. Given below is a hypothetical table showing rates of Income Tax for male citizens below the age of 65 years:

Taxable Income (TI) in	Income Tax in
Does not exceed 1,60,000	Nil
Is greater than 1,60,000 and less than or equal to 5,00,000	$(TI - 1,60,000) * 10\%$
Is greater than 5,00,000 and less than or equal to 8,00,000	$[(TI - 5,00,000) * 20\%] + 34,000$
Is greater than 8,00,000	$[(TI - 8,00,000) * 30\%] + 94,000$

Write a program to input the age, gender (male or female) and Taxable Income of a person. If the age is more than 65 years or the gender is female, display "wrong category".

If the age is less than or equal to 65 years and the gender is male, compute and display the Income Tax payable as per the table given above.

14. Write a program to input an integer and find its factorial. Factorial of a number is the product of all natural numbers till that number. For example, factorial of 5 is 120 since  $1 \times 2 \times 3 \times 4 \times 5 = 120$ .
15. Write a program to input an integer and check whether it is a prime number or not

```
function main()  
{  
    let i,n,c=0;  
  
    console.log("Enter an integer:");  
    n=sc.nextInt();  
    for(i=1;i<=n;i++)  
    {  
        If(n%i==0)  
            c++;  
    }  
    If(c==2)  
        console.log("Prime Number");  
    else  
        console.log("Not a Prime Number");  
}
```

○

16. Write a program to find the sum of all 3-digit even natural numbers.

```
function main() {  
  let i,s=0;  
  for(i=100;i<=998;i+=2)  
  {  
    s+=i;  
  }  
  console.log("Sum="+s);  
}
```

○

17. Write a program to find the sum of all 3 digit odd natural numbers, which are multiples of 5.

18. Write a program to input an integer and find its factorial. Factorial of a number is the product of all natural numbers till that number. For example factorial of 5 is 120 since  $1 \times 2 \times 3 \times 4 \times 5 = 120$ .

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```
function main()  
{  
  let i,n,f=1;  
  n=prompt('Enter an integer:');  
  for(i=1;i<=n;i++)  
  {  
    f=f*i;  
  }  
  console.log("Factotrial:"+f);  
}
```

○

19. Write a program to find the sum of 1st 10 numbers of Lucas series i.e.

2,1,3,4,7,11,18,... Lucas series is such a series which starting from 2 and 1, and subsequent numbers are the sum of the previous two numbers.

20. Write a program to print the first 15 numbers of the Pell series. Pell series is such a series which starts from 1 and 2, and subsequent numbers is the sum of twice the previous number and the number previous to the previous number. Pell series: 1, 2, 5, 12, 29, 70, 169, 408, 985, 2378, 5741, 1386.

ALL THE BEST