

## Functions.

## Find sum using a function

p.s.

return type	fun <sup>n</sup> name.	(p1, p2)
(int) void	(sum)	

{

return int;

}

$$f(x, y) = x + y$$

Find product of the two numbers using  
function.

$$x = 2$$

$$y = 3$$

p.s.

}

int

return

$A * B;$

product (int A, int B)

}

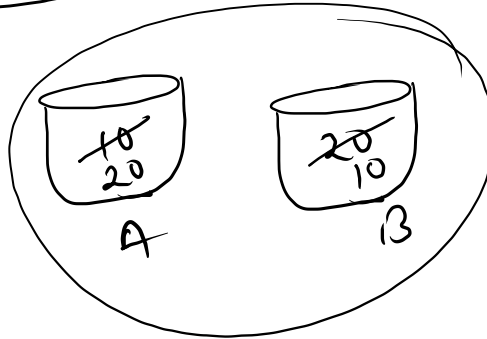
Swap 2 numbers.

↳ Swap 2 no. with help of 3<sup>rd</sup> no.

A = 10  
B = 20

A = B  
B = A

```
system.out  
int C = A;  
A = B;  
B = C;  
System.out
```



Area and perimeter as double using  
function

$$\checkmark \text{ area} = \pi r^2$$

$$\checkmark \text{ perimeter} = 2\pi r$$

$$\pi = \frac{22}{7}$$

$$3.14$$

$\approx$

}

double  $\rightarrow$  decimals.

Swap x y z

M1

4<sup>th</sup> variable

of x to y, y to z, z to x. The

$$\begin{array}{lcl} x & = & 10 \\ y & = & 20 \\ z & = & 30 \end{array} \quad \begin{array}{l} = A \\ = B \\ = C \end{array}$$

$$y = A;$$

$$z = B;$$

$$x = C;$$

10  
20  
30

Sample

30  
10  
20

M2

$$\text{sum} = 60$$

$$60 - 10 - 20 = 30$$

$$(60 - 20 - 30) = 10$$

$$(60 - 10 - 30)$$

$$x$$

Print

$$\begin{array}{l} x = 60 \\ y = 20 \\ z = 30 \end{array}$$

$$\begin{array}{l} y = x \\ z = y \\ x = z \end{array}$$

$$\begin{array}{l} y = x - y - z = 10 \\ z = x - y - z = 60 - 10 - 30 = 20 \\ x = x - y - z = 60 - 10 - 20 = 30 \end{array}$$

$$\begin{array}{l} x = 60 \\ y = 20 \\ z = 30 \end{array}$$

$$y = x$$

$$z = y$$

✓  
1 2<sup>x</sup> 3<sup>x</sup> 4<sup>x</sup> 5 ✓ 6 7 8 9 10  
"-----"  
35

$$y = 2x$$

$$\text{gcd} = 1 \neq 4 \neq 5 \neq 10 \neq 20$$

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22

if  $\begin{matrix} x \longrightarrow 1x \\ y \longrightarrow 1y \end{matrix}$

$$\begin{array}{l|l} x=100 & x=35 \\ y=35 & y=100 \end{array}$$

$x$  as greater always

$y > x \Rightarrow \text{True}$   
 $\downarrow$   
 Swap  
 $\searrow$   
 $x > y$  True

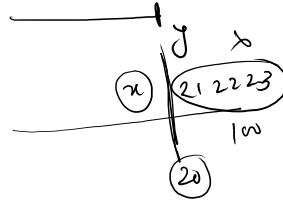
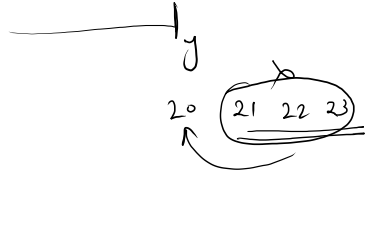
—ly.

$$x = 100$$

$$y = 20$$

$$x = 20$$

$$y = 100$$



Case 1

$$x = 9$$

$$y = 6$$

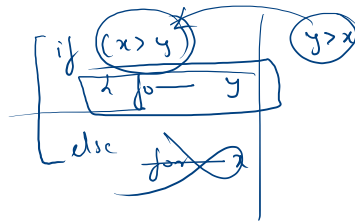
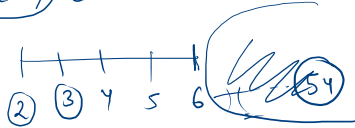
```
Scanner scn = new Scanner(System.in);
int x = scn.nextInt();
int y = scn.nextInt();

int gcd = 1;

if(y > x){
    int temp = x;
    x = y;
    y = temp;
}

//Conclude: X is always greater than
for(int i = 2; i <= y; i++){
    if(x % i == 0 && y % i == 0){
        gcd = i;
    }
}
System.out.println(gcd);
```

$$gcd = 3$$



$$16 > 32$$

gcd.

$$4 / 8$$

$$gcd.$$

$$16$$

$$gcd = 2, 4, 8$$

$$16$$