Write a program to find out the midpoint of any two points.

```
~


# include <stdio.h>
void findMidpoint(double a, double b, double c , double d){
    printf("Midpoints: (%.2f, %.2f)\n",((a+b)/2),((c+d)/2));
}

int main(){
    findMidpoint(1,3,5,7);
    return 0;
}
```

```
~


[wizard@archlinux w2]$ ./a.out
Midpoints: (2.00, 6.00)
[wizard@archlinux w2]$
```

Write a program to find the greatest amongst two numbers.

```
~


# include <stdio.h>

void findGreater(int a, int b){
    printf("The Greater Value is %d",(a>b? a:b));
}

int main(){
    findGreater(1,2);
    return 0;
}
```

```
~


[wizard@archlinux w2]$ ./a.out
The Greater Value is 2
[wizard@archlinux w2]$
```

Write a program to find the triangular numbers upto nth term:

```
~


# include <stdio.h>


void triangular (int n){
    for (int i = 1; i <=n ; i++) {
        printf("%d, ", (i * (i+1) )/2);
    }
}


int main(){
    triangular(5);
    return 0;
}
```

```
~


[wizard@archlinux w2]$ ./a.out
1, 3, 6, 10, 15,
[wizard@archlinux w2]$
```

Write a program to calculate velocity:

```
~


#include <stdio.h>
#include <math.h>


double calcVelocity(double v, double u, double a, double t) {
    if (isnan(v)) return u + a * t;
    if (isnan(u)) return v - a * t;
    if (isnan(a)) return (v - u) / t;
    if (isnan(t)) return (v - u) / a;
    return 0;
}


int main(){
    double v = NAN, u = 5.0, a = 0, t = 3.0;
    printf("The calculated value is: %.2lf\n", calcVelocity(v, u, a, t));
    return 0;
}
```

```
~


[wizard@archlinux w2]$ ./a.out
The calculated value is: 5.00
[wizard@archlinux w2]$
```

Write a void function named "equations" which solves simultaneous equations.

Your program will take six parameters. E.g. function(double a, double b, double c, double d, double e, double f){}. By solving simultaneous equations, you are finding where the two lines cross each other, so your function should print an x and y coordinate.

- ax+by=c ... (i)
- dx+ey=f ... (ii)
- a = number in front of x of equation one
- b = number in front of y of equation one
- c = constant of equation one

- d = number in front of x of equation two
- e = number in front of y of equation two
- f = constant of equation two

```
~

#include <stdio.h>

void equations(double a, double b, double c, double d, double e, double f) {
    double x = (e*c - b*f) / (a*e - b*d);
    double y = (a*f-d*c) / (a*e - b*d);
    printf("x: %f, y: %f",x,y);
}

int main(){
    equations(5.0,6.0,7.0,8.0,9.0,10.0);
}
```

```
~
[wizard@archlinux w2]$ ./a.out
x: -1.000000, y: 2.000000
[wizard@archlinux w2]$
```