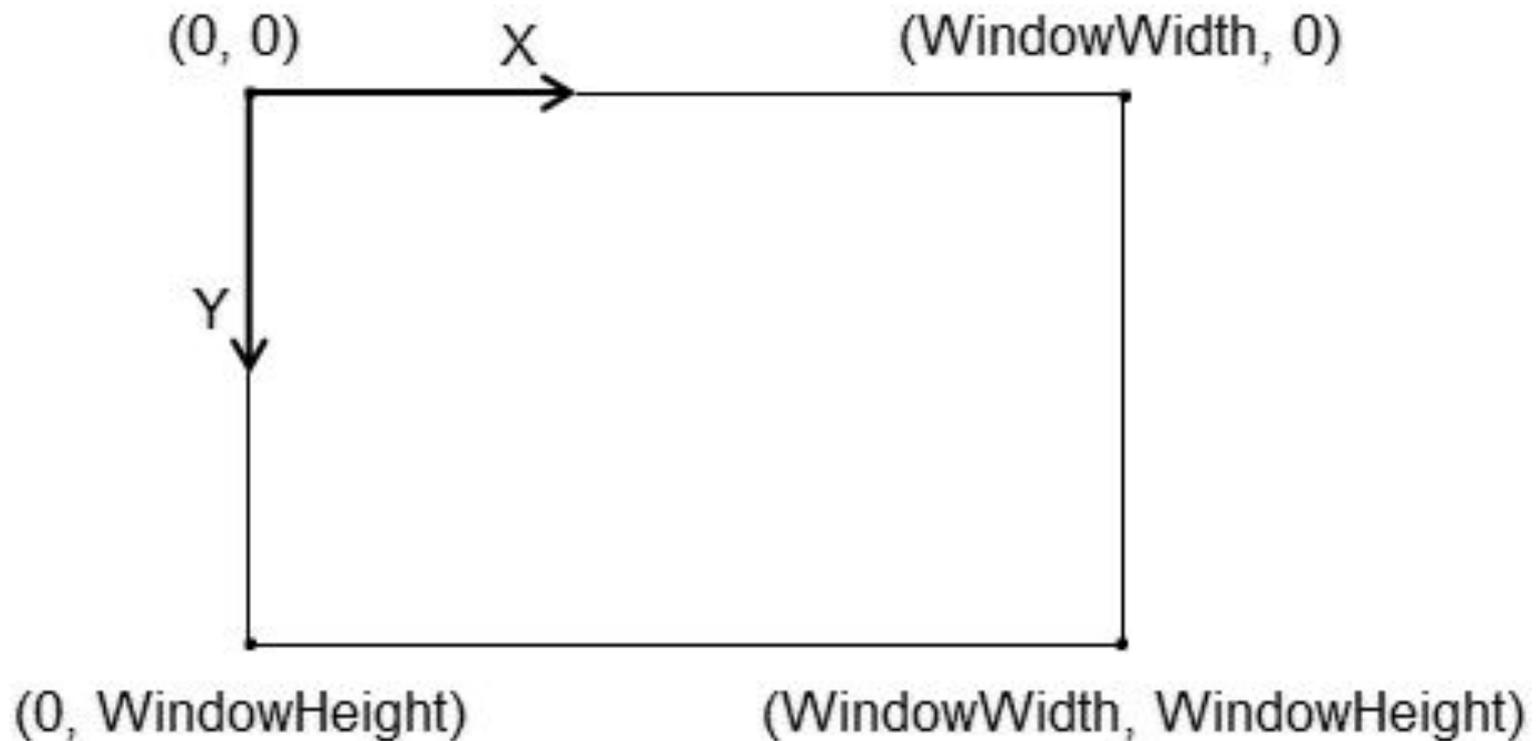


Основы программирования

Лабораторная работа №3

Власенко О.Ф.

Экранная система координат



Рисуем линии

```
case WM_PAINT:
```

```
{
```

```
    PAINTSTRUCT ps;
```

```
    HDC hdc = BeginPaint(hWnd, &ps);
```

```
// Перемещаем "курсор" рисования линии в точку (x = 10, y = 30)
```

```
    MoveToEx(hdc, 10, 30, NULL);
```

```
// Рисуем линию из текущей позиции курсора в точку (x = 10, y = 100)
```

```
// "Курсор" после отрисовки находится в новой точке (x = 10, y = 100)
```

```
    LineTo(hdc, 10, 100);
```

```
// Рисуем линию от предыдущей точки (x = 10, y = 100) до точки (x = 150, y = 100)
```

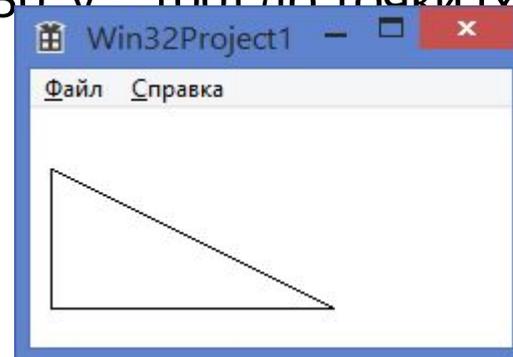
```
    LineTo(hdc, 150, 100);
```

```
// Рисуем линию от предыдущей точки (x = 150, y = 100) до точки (x = 10, y = 30)
```

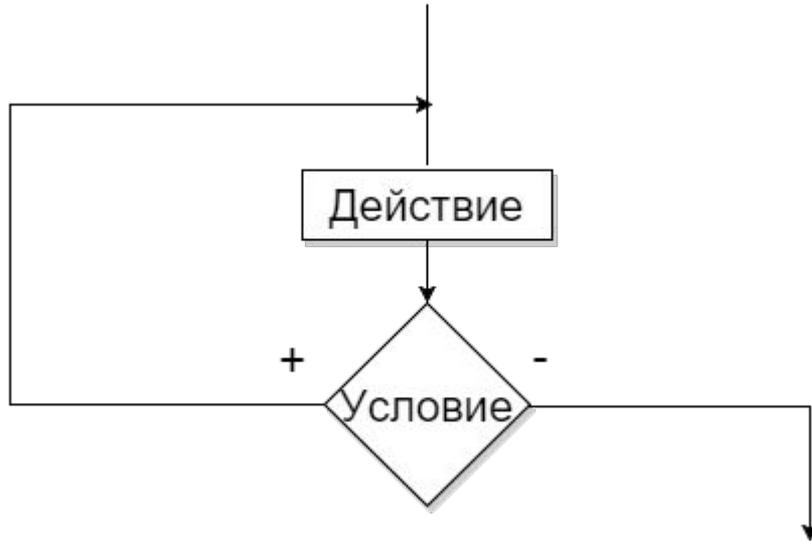
```
    LineTo(hdc, 10, 30);
```

```
    EndPaint(hWnd, &ps);
```

```
}
```



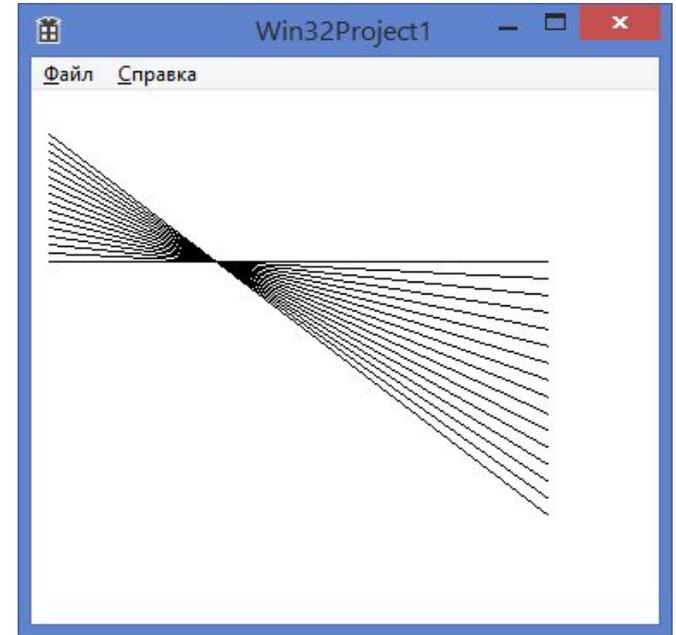
Цикл с постусловием do while



```
do {  
    Действие;  
} while (Условие);
```

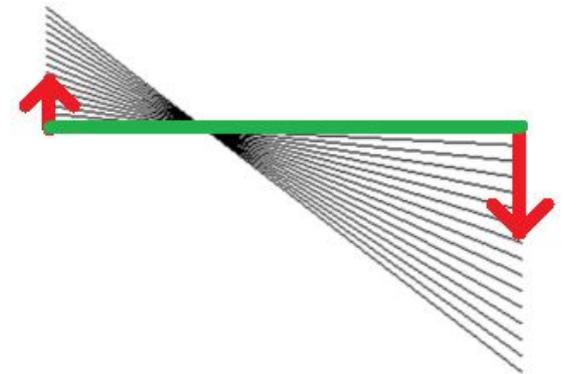
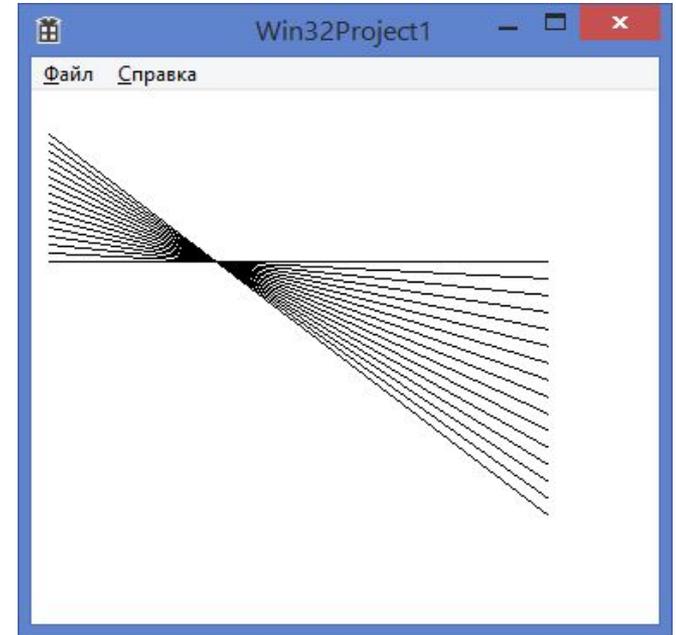
Рисуем много линий

```
case WM_PAINT:  
    {  
        PAINTSTRUCT ps;  
        HDC hdc = BeginPaint(hWnd, &ps);  
  
        int x1 = 10, y1 = 100;  
        int x2 = 300, y2 = 100;  
        int i = 0;  
        do {  
            MoveToEx(hdc, x1, y1, NULL);  
            LineTo(hdc, x2, y2);  
            y1 = y1 - 5;  
            y2 = y2 + 10;  
            i++;  
        } while (i < 16);  
        EndPaint(hWnd, &ps);  
    }
```



Рисуем много линий

```
case WM_PAINT:  
    {  
        PAINTSTRUCT ps;  
        HDC hdc = BeginPaint(hWnd, &ps);  
  
        int x1 = 10, y1 = 100;  
        int x2 = 300, y2 = 100;  
        int i = 0;  
        do {  
            MoveToEx(hdc, x1, y1, NULL);  
            LineTo(hdc, x2, y2);  
            y1 = y1 - 5;  
            y2 = y2 + 10;  
            i++;  
        } while (i < 16);  
        EndPaint(hWnd, &ps);  
    }
```



Рисуем много линий

```
case WM_PAINT:
```

```
{
```

```
    PAINTSTRUCT ps;
```

```
    HDC hdc = BeginPaint(hWnd, &ps);
```

```
    int x1 = 10, y1 = 100;
```

```
    int x2 = 300, y2 = 100;
```

```
    int i = 0;
```

```
    do {
```

```
        MoveToEx(hdc, x1, y1, NULL);
```

```
        LineTo(hdc, x2, y2);
```

```
        y1 = y1 - 5;
```

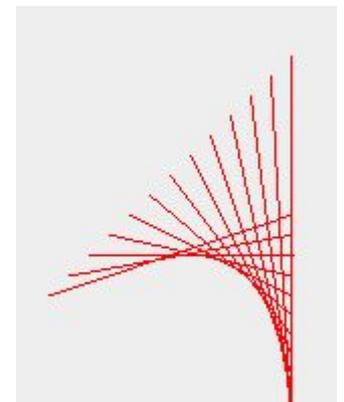
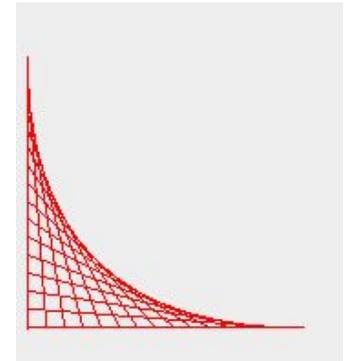
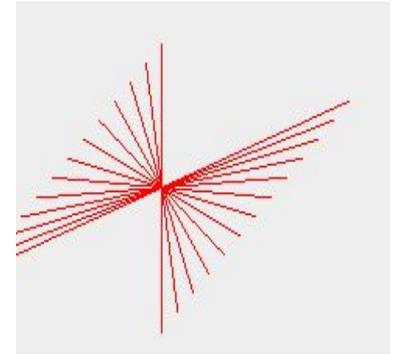
```
        y2 = y2 + 10;
```

```
        i++;
```

```
    } while (i < 16);
```

```
    EndPaint(hWnd, &ps);
```

```
}
```



Рисуем много линий

```
case WM_PAINT:
```

```
{
```

```
    PAINTSTRUCT ps;
```

```
    HDC hdc = BeginPaint(hWnd, &ps);
```

```
    int x1 = 10, y1 = 100;
```

```
    int x2 = 300, y2 = 100;
```

```
    int i = 0;
```

```
    do {
```

```
        MoveToEx(hdc, x1, y1, NULL);
```

```
        LineTo(hdc, x2, y2);
```

```
        y1 = y1 - 5;
```

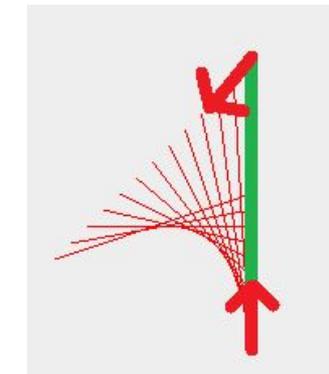
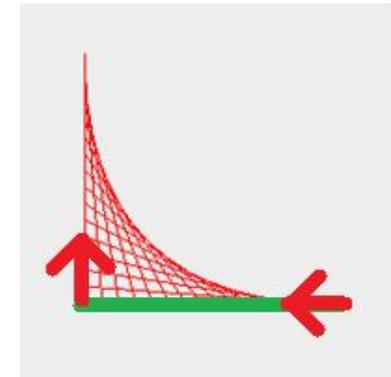
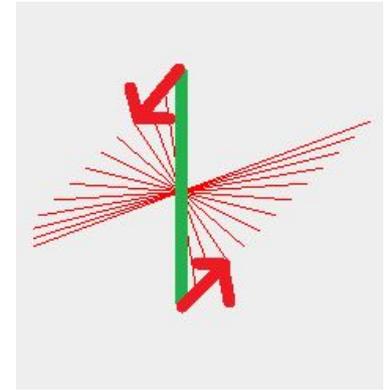
```
        y2 = y2 + 10;
```

```
        i++;
```

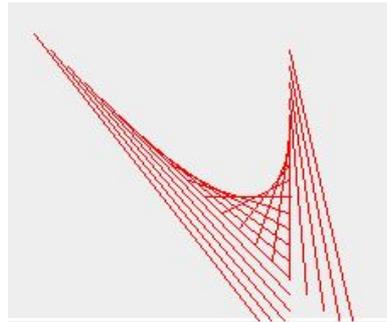
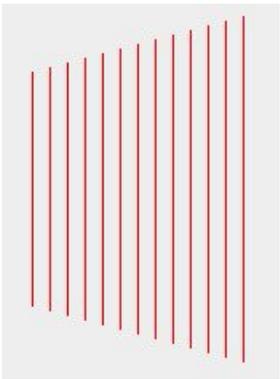
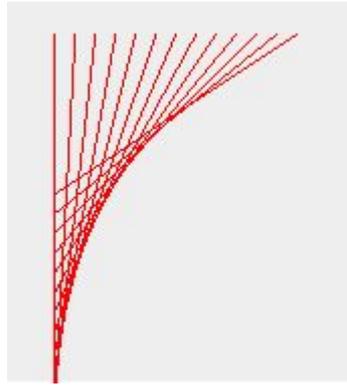
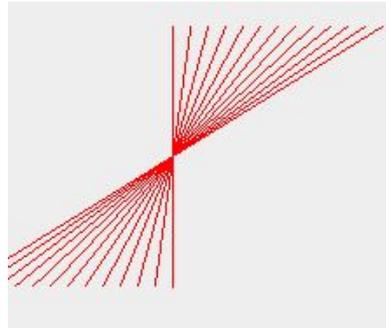
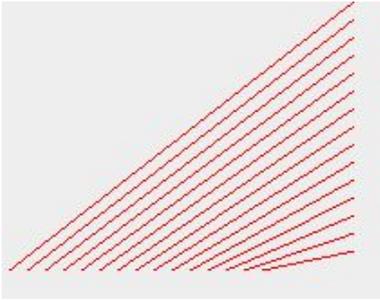
```
    } while (i < 16);
```

```
    EndPaint(hWnd, &ps);
```

```
}
```



Рисуем много линий



Что успеете – в классе. Что останется - дома.

Рисуем много линий – отдельная функция

```
void DrawMasterpiece(HDC hdc) {
```

```
    int x1 = 10, y1 = 100;
```

```
    int x2 = 300, y2 = 100;
```

```
    int i = 0;
```

```
    do {
```

```
        MoveToEx(hdc, x1, y1, NULL);
```

```
        LineTo(hdc, x2, y2);
```

```
        y1 = y1 - 5;
```

```
        y2 = y2 + 10;
```

```
        i++;
```

```
    } while (i < 16);
```

```
}
```

```
...
```

```
case WM_PAINT:
```

```
{
```

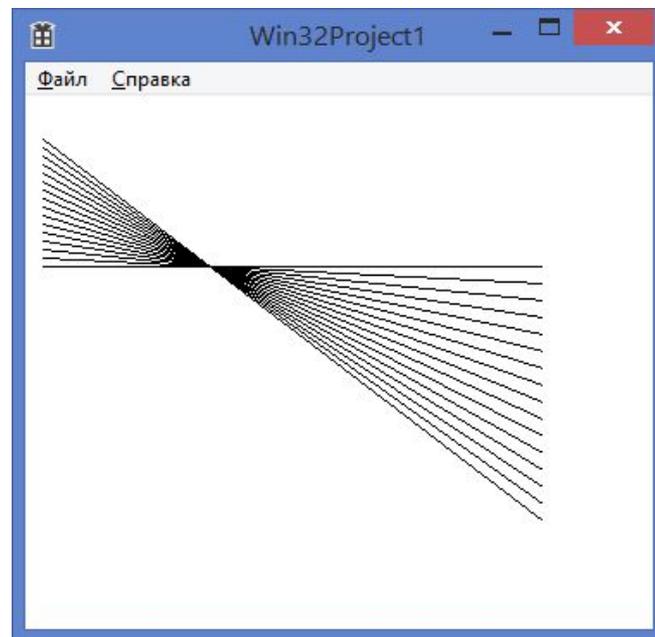
```
    PAINTSTRUCT ps;
```

```
    HDC hdc = BeginPaint(hWnd, &ps);
```

```
    DrawMasterpiece(hdc);
```

```
    EndPaint(hWnd, &ps);
```

```
}
```



Рисуем много линий – отдельная функция

```
void DrawMasterpiece2(HDC hdc ) {
```

```
    int x1 = 10, y1 = 100;
```

```
    int x2 = 300, y2 = 100;
```

```
    int i = 0;
```

```
    do {
```

```
        MoveToEx(hdc, x1, y1, NULL);
```

```
        LineTo(hdc, x2, y2);
```

```
        y1 = y1 - 5;
```

```
        y2 = y2 + 10;
```

```
        i++;
```

```
    } while (i < 16);
```

```
}
```

```
...
```

```
case WM_PAINT:
```

```
{
```

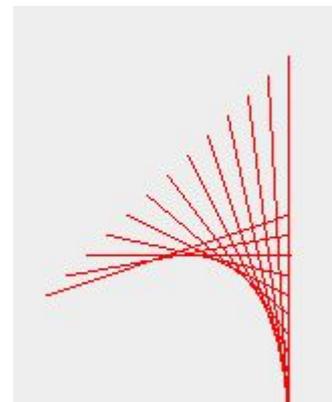
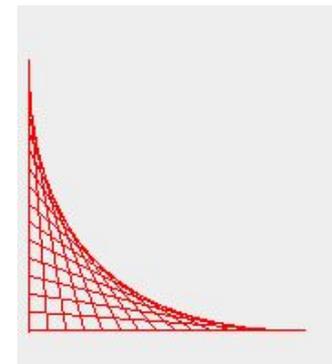
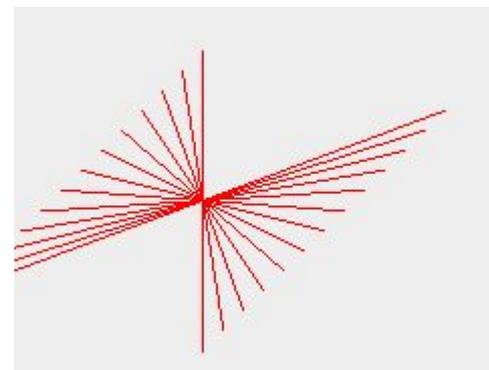
```
    PAINTSTRUCT ps;
```

```
    HDC hdc = BeginPaint(hWnd, &ps);
```

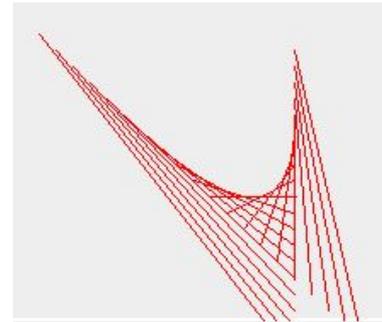
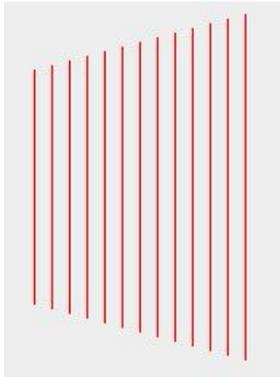
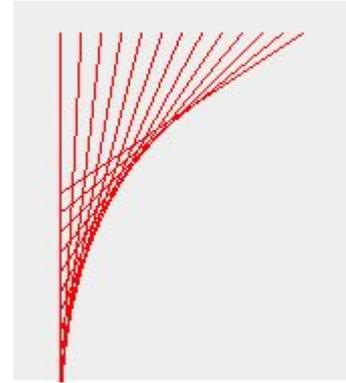
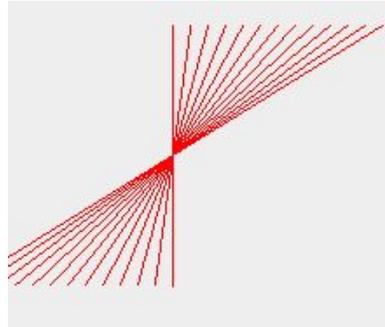
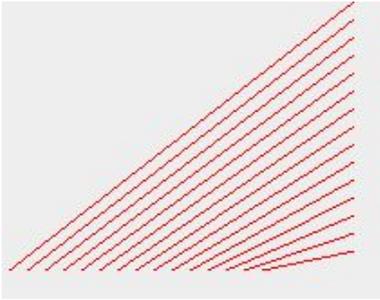
```
    DrawMasterpiece2(hdc);
```

```
    EndPaint(hWnd, &ps);
```

```
}
```

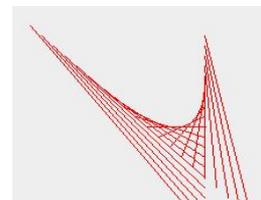
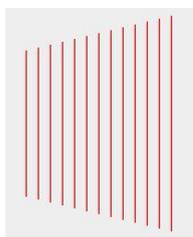
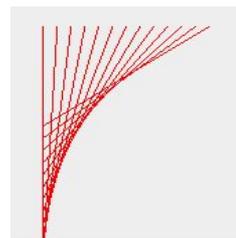
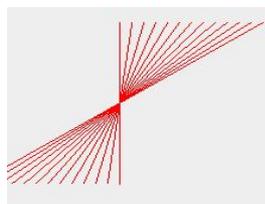
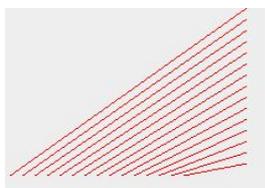
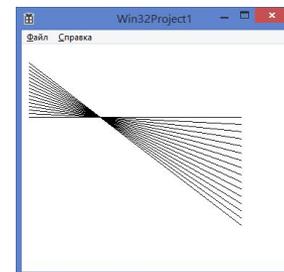
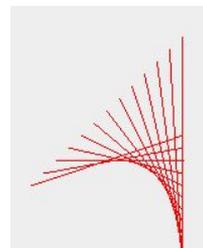
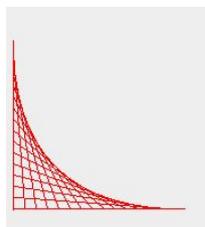
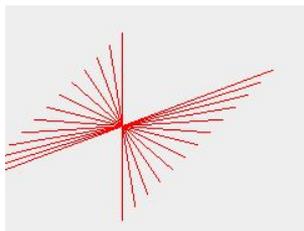


Рисуем много линий



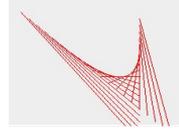
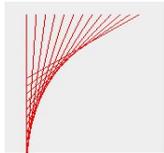
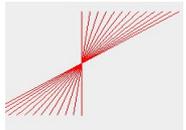
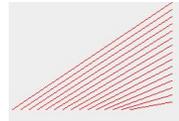
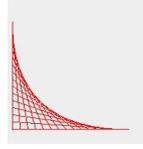
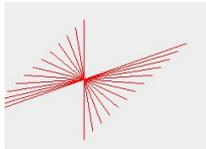
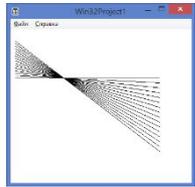
Что успеете – в классе. Что останется - дома.
В итоге у вас будет 10 функций, которые можно вызывать.

Домашнее задание - задачи



В итоге у вас есть 10 функций, которые можно вызывать вместе или по отдельности.

Домашнее задание - оформление



Для сдачи домашней работы нужно подготовить отчет.

Отчет состоит из:

- 1) Стандартного титульного листа
- 2) Полной распечатки кода программы – включая 10 функций и пример их вызова
- 3) Блоксхем двух из этих функций
- 4) Ручной трассировки каждой из 10 функций – нужны первые 3-5 шагов трассировки