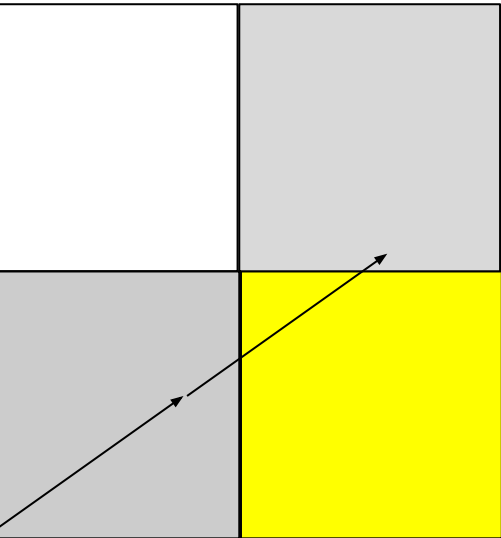
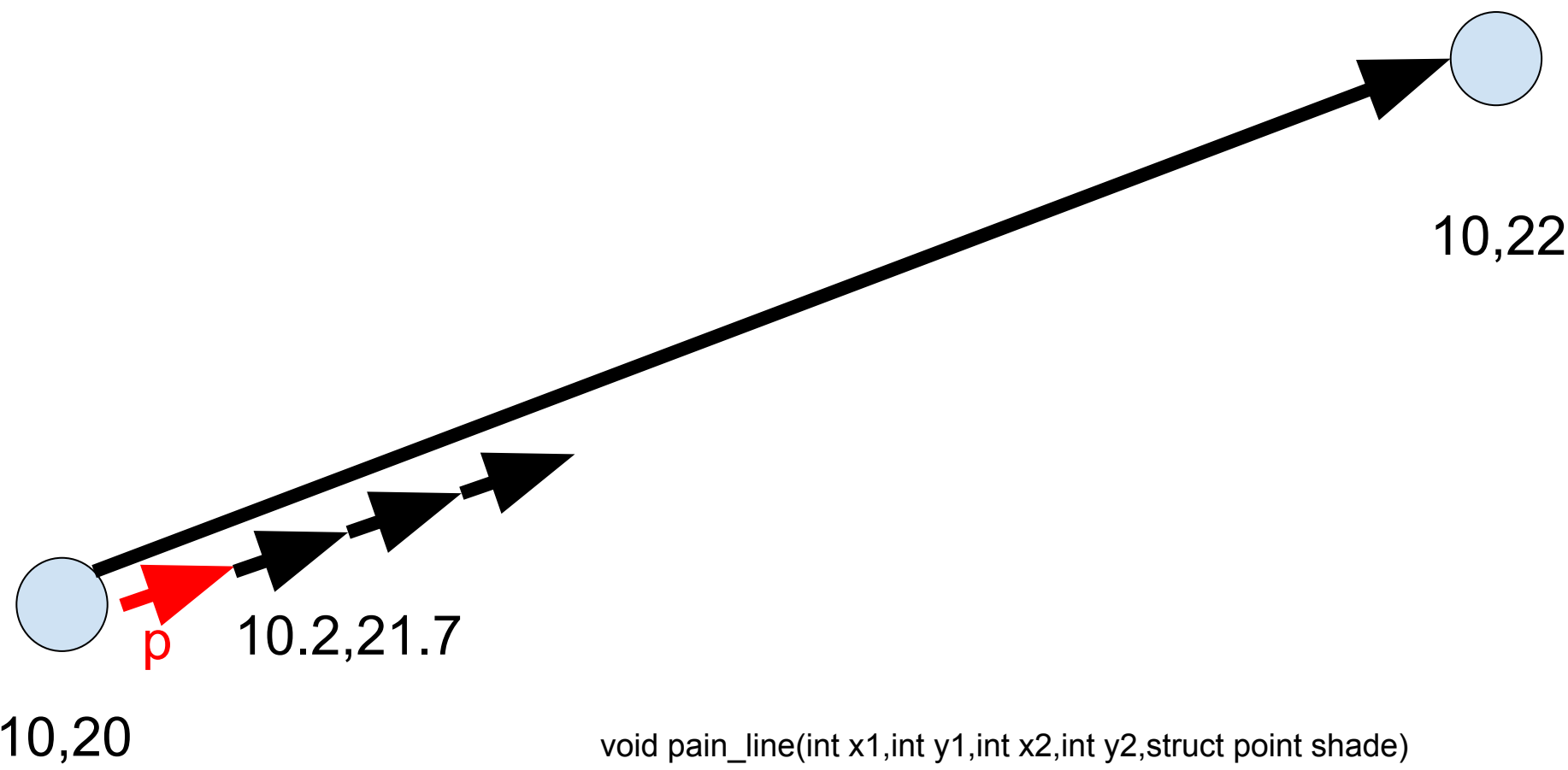


Рисование прямой по 2-м точкам и отрезка по 2-м точкам



```
void pain_line(int x1,int y1,int x2,int y2,struct point shade)
{
    if(x1<=WIDTH && x2<=WIDTH && y1<=HEIGHT && y2<=HEIGHT && 0<=x1 && 0<=x2 && 0<=y1 && 0<=y2)
    {
        double vect_x=x2-x1;
        double vect_y=y2-y1;
        double length=sqrt(vect_x*vect_x+vect_y*vect_y);
        //printf("length=%lf\n",length);
        double p_x=vect_x/(100*length);
        double p_y=vect_y/(100*length);
        double p_x2;
        double p_y2;
        int i;
        for(i=1;1;i++)
        {
            p_x2=x1+i*p_x;
            p_y2=y1+i*p_y;
            truecolor[(int)p_x2][(int)p_y2].blue=shade.blue;
            truecolor[(int)p_x2][(int)p_y2].green=shade.green;
            truecolor[(int)p_x2][(int)p_y2].red=shade.red;

            if(p_x2>=WIDTH || p_x2<=0 || p_y2>=HEIGHT || p_y2<=0)
            {
                break;
            }
        }
        p_x=p_x*(-1);
        p_y=p_y*(-1);
        for(i=1;1;i++)
        {
            p_x2=x1+i*p_x;
            p_y2=y1+i*p_y;
            truecolor[(int)p_x2][(int)p_y2].blue=shade.blue;
            truecolor[(int)p_x2][(int)p_y2].green=shade.green;
            truecolor[(int)p_x2][(int)p_y2].red=shade.red;

            if(p_x2>=WIDTH || p_x2<=0 || p_y2>=HEIGHT || p_y2<=0)
            {
                break;
            }
        }
    }
    else
    {
        printf("ERROR");
    }
}
```

```
void pain_stick(int x1,int y1,int x2,int y2,struct point shade)
{
    if(x1<=WIDTH && x2<=WIDTH && y1<=HEIGHT && y2<=HEIGHT && 0<=x1 && 0<=x2 && 0<=y1 && 0<=y2)
    {
        double vect_x=x2-x1;
        double vect_y=y2-y1;
        double length=sqrt(vect_x*vect_x+vect_y*vect_y);
        if(length!=0)
        {
            //printf("length=%lf\n",length);
            double p_x=vect_x/(10*length);
            double p_y=vect_y/(10*length);
            double p_x2;
            double p_y2;
            int i;
            double midlength;
            for(i=1;1;i++)
            {
                p_x2=x1+i*p_x;
                p_y2=y1+i*p_y;
                truecolor[(int)p_x2][(int)p_y2].blue=shade.blue;
                truecolor[(int)p_x2][(int)p_y2].green=shade.green;
                truecolor[(int)p_x2][(int)p_y2].red=shade.red;
                midlength=i*sqrt(p_x*p_x+p_y*p_y);
                if(midlength>length)
                {
                    break;
                }
            }
        }
        else
        {
            truecolor[(int)x1][(int)y1].blue=shade.blue;
            truecolor[(int)x1][(int)y1].green=shade.green;
            truecolor[(int)x1][(int)y1].red=shade.red;
        }
    }
    else
    {
        printf("ERROR");
    }
}
```

A(x1,y1)  
B(x2,y2)  
AB{x2-x1;y2-y1} Декартовы=Смещения  
|AB|=V[(x2-x1)^2+(y2-y1)^2]  
p{(x2-x1)/(2|AB|),(y2-y1)/(2|AB|)}

AB{длина;направление} Полярные

(x1,y1)+p{)=(конец p)  
(x1,y1)+2p{)=(конец 2p)

