

Convert rect  $(x, y)$  to polar  $r / \theta$

given  $x, y$

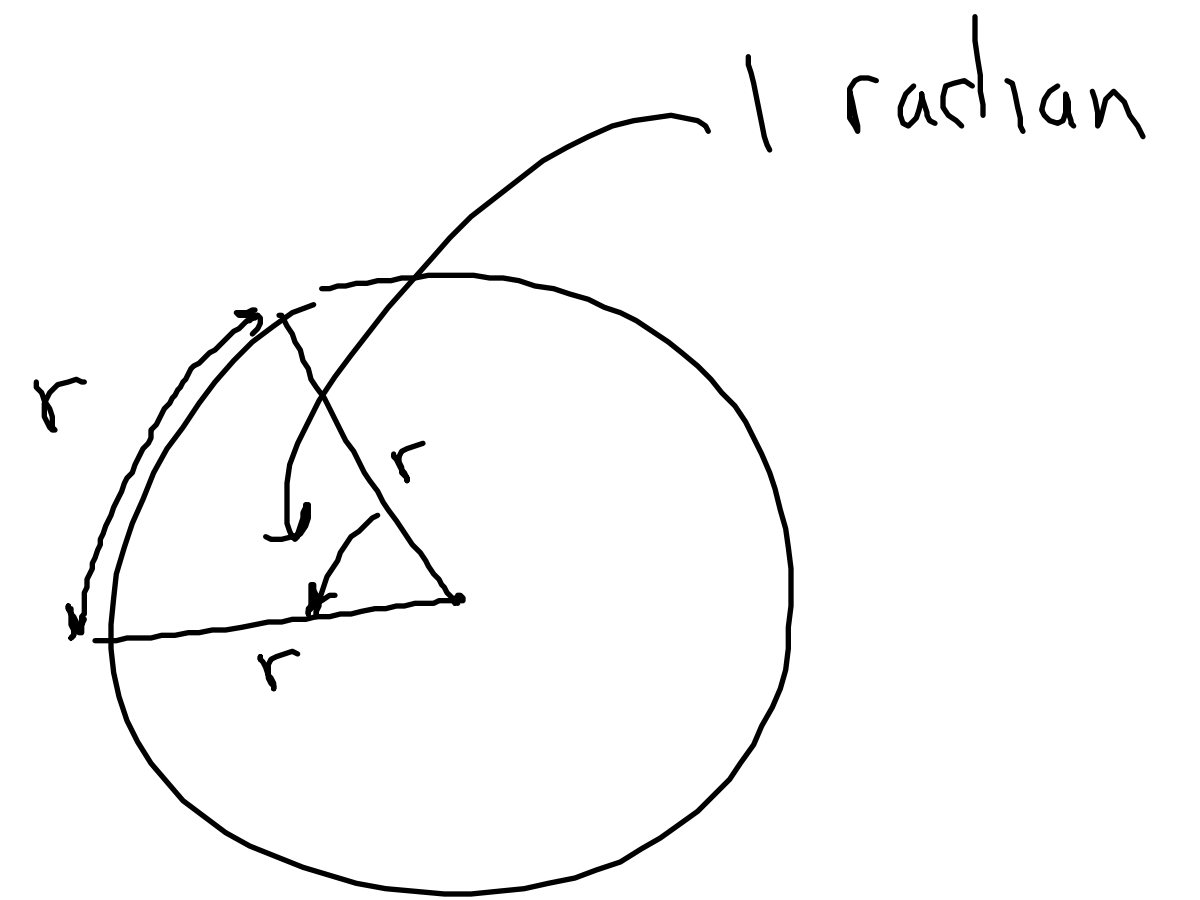
$$r = \sqrt{x^2 + y^2}$$

$$\theta = \tan^{-1} \frac{y}{x}$$

in  $\angle$

$$a = a \operatorname{atan2}(y, x);$$

//  $\operatorname{atan2}$  does all the  
// adding 180, changing sign, etc



$$360^\circ = 2\pi \text{ radians}$$

```

void main()
{
    double x, y, r, t;
    printf("Enter x any y:");
    scanf_s("%lf %lf", &x, &y);
    rect2polar(x, y, &r, &t);
    printf("Equiv polar %lf L- %lf\n", r, t);
}

```

```

void rect2polar(double x, double y,
    double* pr, double* pt)
    address of double
{
    double radius, angdeg, angrad;
    radius = sqrt(x*x + y*y);
    angrad = atan2(y, x);
    angdeg = angrad * 180.0 / 3.145265358979;
    *pr = radius;
    *pt = angdeg;
}

```

