Some Parametric & Polar Questions • What is the curve described by the parametric equation  $\chi = \sin t$ ,  $\eta = \sqrt{1 - \cos^2 t}$ ? (Describe as a function or relation, or with a picture)

• Which of the following paremetric equations (maybe more than one), describe the same curve as  $x=e^{t}, y=e^{t}$ ?

 $\frac{q}{r} x = t, \quad y = t$   $\frac{q}{r} x = t^2, \quad y = t^2$ f x = t, y = t with domain  $(0, \infty)$ A  $x = \sin t + 1$ ,  $y = \sin t + 1$ A  $x = \frac{1}{2}$ ,  $y = \frac{1}{2}$  with domain (0,00)

• The curve described by x=3+2t<sup>2</sup>, of = 4+7t passes through the point (11,:10) exactly once. Find the tangent line if it exists.

Sketch the following curves then plot them on desmos to see how you did.

 $\frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} = \frac{1$  $r = Cos(\theta) + 1$  $\mathbf{X}$   $r = Sin(\Theta + T_{4}) + 1$ \* x=2cost, y= Sint

 Set up an integral or sum of integrals to compute the area contained in both raising and racosg.

Set up an integral to determine the length of the spiral r=20 with 0 ranging from 0=0 to 0=2.

· Say we have a function f Such that the cartesian plot is as follows



Draw the polor graph, r= f(0).