

**ONE** Find the area of the surface generated by revolving the curve  $y = \frac{e^x + e^{-x}}{2}$  in the interval  $0 \leq x \leq \ln(2)$  about the  $x$ -axis.

**TWO** Consider the region  $R$  between the curves  $y = \sin(x)$  and  $y = \cos(x)$  for  $x$  between 0 and  $\pi/4$ .

a) Sketch the region  $R$ .

b) Set up, **but do not evaluate**, the definite integral that will give the volume of the solid generated when  $R$  is rotated about the  $x$ -axis.

c) Set up, **but do not evaluate**, the definite integral that will give the volume of the solid generated when  $R$  is rotated about the line  $x = 2$ .