1. Find the area of the region bounded by $y = x^2$ and $y = \sqrt{x}$.   (Sketch the curves first!)

1. Find the area of the region bounded by $y = \pi x - x^2$ and $y = \sin(x)$. (Sketch the curves first!)

1. Find the area of the region bounded by $y = e^x$, $y = e^{-2x}$ and $x = \ln(4)$. (Sketch the curves first!)

1. Find the area of the region bounded by $y = \dfrac{2}{1 + x^2}$ and $y = 1$. (Sketch the curves first!)