Let $f(x) = \sqrt{1-x^2}$. The formula for curvature is.

$$\kappa(x) = \frac{f''(x)}{\left(1+f'(x)^2\right)^{\frac{3}{2}}}$$

First calculate f'.

$$f'(x) = \frac{1}{\cancel{2} \cdot \sqrt{1-x^2}} \cdot (-\cancel{2}x) = \frac{-x}{\sqrt{1-x^2}}$$

Then calculate f''.

$$f''(x) = \frac{-\sqrt{1-x^2} - (-x) \cdot \frac{1}{\cancel{2} \cdot \sqrt{1-x^2}} \cdot (-\cancel{2}x)}{1-x^2} = \frac{-\sqrt{1-x^2} - x^2 \frac{1}{\sqrt{1-x^2}}}{1-x^2}$$

With these:

$$\frac{f''(x)}{\left(1+f'(x)^2\right)^{\frac{3}{2}}} = \frac{\frac{-\sqrt{1-x^2}-x^2\frac{1}{\sqrt{1-x^2}}}{1-x^2}}{\left(1+\left(\frac{-x}{\sqrt{1-x^2}}\right)^2\right)^{\frac{3}{2}}} = \frac{\frac{-\sqrt{1-x^2}-x^2\frac{1}{\sqrt{1-x^2}}}{1-x^2}}{\left(1+\frac{x^2}{1-x^2}\right)^{\frac{3}{2}}} = \frac{\frac{-\sqrt{1-x^2}-x^2\frac{1}{\sqrt{1-x^2}}}{1-x^2}}{\left(\frac{1}{1-x^2}\right)^{\frac{3}{2}}} =$$

$$\left(1-x^2\right)^{\frac{\cancel{3}}{2}} \cdot \frac{-\sqrt{1-x^2} - x^2 \frac{1}{\sqrt{1-x^2}}}{\cancel{1-x^2}} = \left(1-x^2\right)^{\frac{1}{2}} \cdot \left(-\sqrt{1-x^2} - x^2 \frac{1}{\sqrt{1-x^2}}\right) =$$

$$-(1-x^2) - x^2 = -1$$