$f_n(x) = 2^n \sqrt{1-\left(\frac{x}{2}\right)^2}^n$, $f_n(0) = 2^n$, so let $u_n = \frac{1}{2^n}$.

Now $u_n f_n(x) = \sqrt{1-\left(\frac{x}{2}\right)}$

and $\int_{-2}^{2} u_n f_n(x) = \int_{-2}^{2} \sqrt{1-\left(\frac{x}{2}\right)^2}^n dx \underset{dx = 2dy}{\overset{x := 2y}{=\!=}} 2\int_{-1}^{1} \sqrt{1-y^2}^n dy \underset{HA}{\overset{\text{other}}{\sim}} 2\sqrt{\frac{2\pi}{n}}$

Now $\int\limits_{\text{on its domain}} u_n f_n(v_n x)\, dx \underset{dx = \frac{1}{v_n} dz}{\overset{x := \frac{z}{v_n}}{=\!=}} \int_{-2}^{2} u_n f_n(z) \frac{1}{v_n} dz = \frac{1}{v_n} \int_{-2}^{2} u_n f_n(z) dz$

$\sim \frac{1}{v_n} \; 2\sqrt{\frac{2\pi}{n}}$.

This converges to 1 iff $v_n \sim 2\sqrt{\frac{2\pi}{n}}$

So let $v_n = 2\sqrt{\frac{2\pi}{n}}$.

Now

$g_n(x) = u_n f_n(v_n x) = \sqrt{1-\left(\frac{2\sqrt{\frac{2\pi}{n}}x}{2}\right)^2}^n = \sqrt{\left(1-\frac{2\pi x^2}{n}\right)^n}$

[Since $\left(1+\frac{c}{n}\right)^n \longrightarrow e^c$ for every $c \in \mathbb{R}$],

$g_n(x) \longrightarrow \sqrt{e^{-2\pi x^2}} = \underline{\underline{e^{-\pi x^2} = g(x)}}$