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EX.3.2.1, Sauer3

- a. Find the degree 2 interpolating polynomial $p_2(x)$ through the points $(0,0), (\frac{\pi}{2},1)$, and $(\pi,0)$.
- b. Calculate $p_2(\frac{\pi}{4})$, an approximation for $\sin(\frac{\pi}{4})$.
- c. Use Theorem 3.3 to give an error bound for the approximation in part (b).
- d. Using a Colab Jupyter Notebook, compare the actual error to your error bound.