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Remember to indent the bodies of your IF-THEN and looping structures. Also, remember to compute your exact values for the integrals using 16 digits or use the process as in the notes.

For each of the problems below, use the `integral` function to approximate the integral and determine the relative error in the approximation. You can obtain the exact values using either hand calculation or Mathematica, *etc.*. You should hand in the output and copies of all your scripts/functions.

1)  $\int_0^{\frac{\pi}{2}} \sin x \, dx$

2)  $\int_{-1}^3 x^3 e^{-2x} \, dx$

3)  $\int_0^2 \cos(20x) e^{-x} \, dx$