## Sample 8a

**Write a MATLAB program to calculate and print the following integral:**

$$I = \int_{1}^{6} \frac{(x^3+5)\sqrt{x^4+2X} \cdot e^{\frac{4X}{X^2+1}}}{(x^2+3X+7)\sin\left(\frac{\pi}{8}X\right)} \, dx$$

**Use 1e-7 as the accuracy factor.**

**The output of this program should look like this:**

**I = 473.34847**