LOTI.05.019 Data Analysis and Computational Methods with MATLAB
First Practical Session

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1. Question 1

Calculate:

$$(a)\frac{\sqrt{41^2-5.2^2}}{e^5-100.53} \qquad (b)\sqrt[3]{132}+\frac{\ln(500)}{8} \tag{1}$$

2. Question 2

Calculate:

$$(a)\frac{14.8^3-6.3^2}{\left(\sqrt{13}+5\right)^2} \qquad (b)45\left(\frac{288}{9.3}-4.6^2\right)-1065e^{-1.5} \tag{2}$$

3. Question 3

Calculate:

$$(a)\cos\left(\frac{7\pi}{9}\right)+\tan\left(\frac{7\pi}{15}\right)\sin\left(15^\circ\right) \qquad (b)\sin^2 80^\circ-\frac{\left(\cos 14^\circ \sin 80^\circ\right)^2}{\sqrt[3]{0.18}} \tag{3}$$

4. Question 4

Given $\int x\sin axdx=\frac{\sin ax}{a^2}-\frac{x\cos ax}{a}$, use MATLAB to calculate the definite integral $\int_{\frac{\pi}{3}}^{\frac{3\pi}{2}} x\sin(0.6x)dx$.

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