Ma1 Answer Sheet

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Task 6: *MATLAB as a Calculator*

Part A: Use MATLAB to calculate the value of each expression. Copy the command from MATLAB into the second column of the table below and the result from MATLAB into the third column.

Expression	MATLAB command	MATLAB result
$p = (2 + 7)^3 + (273^{2/3})/2 + (55^2)/3$	p = (2+3)^3+(273^(2/3))/2+(55^2)/3	1.1544e+03
$q = 2^3 + 7^3 + (273^2)/2 + 55^{2/3}$	q = 2^3+7^3+(273^2)/2 + 55^(2/3)	3.7630e+04
$r = \lvert 1 - 0.4\tan^{-1}(\pi/6)\rvert$	r = abs(1-0.4*atan(pi/6))	0.8071

Part B: Define the variables x and z as x = 9.6 and z = 8.1. Use MATLAB to calculate the value of each expression. Copy the command from MATLAB into the second column of the table below and the result from MATLAB into the third column.

Expression	MATLAB command	MATLAB result
$a = xz^2 - \left(\frac{2z}{3x}\right)^{3/5}$	a = x*z^2-((2*z)/(3*x))^(3/5)	629.1479
$b = \frac{443z}{2x^3} + \frac{e^{-xz}}{x+z}$	b = ((443*z)/(2*x^3))+((exp(-x*z))/(x+z))	2.0279
$c = \ln(z)$	c = log(z)	2.0919
$d = \log(z)$	D = log(z)	2.0919

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Task 7: *Matrix Manipulations*

Part B: Complete the table below.

Function	MATLAB Command
Create a **Bmatrix** by replacing the middle row of **Amatrix** with the **Bvector**.	`Amatrix(2,:) = Bvector`
Create the **Gvector** by extracting the third row in **Amatrix**.	`Gvector = Amatrix(3,:)`
Extract row 2, column 3 from **Amatrix**	`Amatrix(2,3)`
Replace the value 2 in **Amatrix** (row 1 and column 1) with the value 55.	`Amatrix(1) = 55; Amatrix`

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