Homework Quiz 2

Due 6 Oct at 6:00 **Points** 150 **Questions** 15
Available 29 Sep at 6:00 - 6 Oct at 6:00 **Time limit** None

This quiz was locked 6 Oct at 6:00.

Attempt history

	Attempt	Time	Score
LATEST	Attempt 1	120 minutes	140 out of 150

Score for this quiz: **140** out of 150
Submitted 4 Oct at 18:23
This attempt took 120 minutes.

Question 1

10 / 10 pts

How many elements are in the row vector produced by the MATLAB expression 15:3.3:1?

- 3
- 2
- 0 — Correct!
- 5
- 4
- Undefined (error)

Good job!

Question 2

10 / 10 pts

Pick **all** MATLAB commands that produce the column vector: $\begin{bmatrix} 5 \\ 10 \\ 15 \\ 20 \end{bmatrix}$

Correct! (5:5:20)'

Correct! [5; 10; 15; 20]

5:5:20'

Correct! [5:5:23]'

Correct! [5, 10, 15, 20]'

5:5:20

(5:20)'

Good

Question 3

10 / 10 pts

Given the matrix A = [5:9; 1:2:9; 12:-3:0], select the MATLAB expression that would produce the same result as the expression A([3,2],5) .

[9; 0]

[1, 3, 5, 7, 9; 12, 9, 6, 3, 0]

[5, 6]

0

Error

Correct!

[0 9]'

[9, 0]

Good job!

Question 4

10 / 10 pts

Given the matrix A = [5:9; 1:2:9; 12:-3:0], what is A(2,[3,1,5])?

[6; 3; 9]

Correct!

[5, 1, 9]

[5, 7, 9]

Undefined

[1, 5, 9]

Good job!

Question 5

10 / 10 pts

Given the arrays x = [1 5 2 8 9 0 1] and y = [5 2 2 6 0 0 2], what is (x > y) | (y < x)?

- [1 1 1 1 0 0 1]
- [0 0 0 0 1 0 0]
- [0 0 0 0 0 0 1]
- [1 0 1 0 0 1 1]
- [0 0 1 0 0 1 0]
- [0 0 0 0 0 0 0]

Correct!

- [0 1 0 1 1 0 0]

Good job!

Question 6

10 / 10 pts

Select **all sets** of expressions below that produce a logical 1 in MATLAB.

x = 8

- (x>0) & (x < 2)

Correct!

- 5 && ~0
- 1 == 2

Correct!

a = 100

b = 5

- [x] (b ~= 0) && (a/b > 18.5)

Good job!

Question 7

10 / 10 pts

For A = [1, -1; -2, 3] and B = [4, 2; 3, -4], what is A+B?

- [ ] [4, -2; -6, -12]

Correct!

- [x] [5, 1; 1, -1]
- [ ] [1, 6; 1, -16]
- [ ] [5, 1, 1, -1]

Question 8

10 / 10 pts

For A = [3, -2; -5, 1] and B = [2, -2; 0, 4], what is A .* B ?

- [ ] [6, -14; -10, 14]
- [ ] [2, -6; -1, 5]
- [ ] [3, -4; -2, 4]

Correct!

- [x] [6, 4; 0, 4]

[3, -3; -1, 4]

Question 9

10 / 10 pts

For any matrix A of the appropriate size, which command will swap the first and second-to-last rows?

A([end-1 1],:)

Correct!

A([1 end-1],:) = A([end-1 1],:)

A(:,[1 end-1]) = A(:,[end-1 1])

A(:,[end-1 1])

Good job!

Question 10

10 / 10 pts

For any matrix A of the appropriate size, which command will put all 7's in the third column?

Correct!

A(:,3) = 7

A(3,:) = 7

A(:,3) = 7.*ones(size(A))

A(3,:) = 7.*ones(size(A(3,:)))

Good job!

Question 11

10 / 10 pts

For a matrix A of size 4x4 select **all** MATLAB commands that will make the entries of the first column equal to the entries of the first row:

Correct!
- [x] A(2:end,size(A,1)-3) = A(1,size(A,2)-2:size(A,2))
- [ ] A(:,end-4) = A(1,:)

Correct!
- [x] A(end-2:end,1) = A(1,end-2:end)'
- [ ] A(1,:) = A(:,size(A)-3)

Correct!
- [x] A(size(A,1)-2:end,size(A,2)-3) = A(end-3,2:4)'

Great job!

Question 12

10 / 10 pts

For any matrix A of the appropriate size, which command will subtract 3 times the first row from the third row and replace the third row with the difference?

- [ ] A(3,:) = 3*A(3,:) - 3 * A(1,:)
- [ ] A(3,:) = A(1,:) - 3 * A(1,:)

Correct!
- [x] A(3,:) = A(3,:) - 3 * A(1,:)

A(:,3) = A(:,3) - 3 * A(:,1)

A(1,:) = A(1,:) - 3 * A(3,:)

Good job!

Question 13

10 / 10 pts

For the linear system of equations:

$$\begin{aligned} -2x_1 + 5x_2 + x_3 + 3x_4 + 4x_5 - x_6 &= 0 \\ 2x_1 - x_2 - 5x_3 - 2x_4 + 6x_5 + 4x_6 &= 1 \\ -x_1 + 6x_2 - 4x_3 - 5x_4 + 3x_5 - x_6 &= -6 \\ 4x_1 + 3x_2 - 6x_3 - 5x_4 - 2x_5 - 2x_6 &= 10 \\ -3x_1 + 6x_2 + 4x_3 + 2x_4 - 6x_5 + 4x_6 &= -6 \\ 2x_1 + 4x_2 + 4x_3 + 4x_4 + 5x_5 - 4x_6 &= -2 \end{aligned}$$

What is $x_1 + x_2 - x_3 - x_4 + x_5 - x_6$? Use MATLAB to find the answer.

Please enter your answer **as a decimal (not a fraction)** accurate to **at least 2 decimal places**.

Correct!

0.46

orrect Answers

Between 0.45 and 0.465

Good job!

Question 14

0 / 10 pts

For the system given below, find $x_1 + x_2 + x_3$ using MATLAB.

$$3x_1 + 2x_3 = x_2$$
$$6x_1 + 3x_2 + 2 = 7x_3$$
$$9x_2 + 2x_1 = 4x_3 + 3$$

Please enter your answer **as a decimal (not a fraction)** accurate to **at least 2 decimal places**.

ou Answered

0.57

orrect Answers

0.8745 (with margin: 0.1)

Construct A and b in MATLAB, compute A\b, and find the sum of the solutions.

Question 15

10 / 10 pts

Select **all sets** of expressions below that produce the same result in MATLAB.

Correct!

A = zeros(10,5)';

- [x] A(1:2,4:7)'

```
A = ones(4,4).*5;
A([1,end],:) = 1;
A(:,[1,end]) = 1;
```

- [ ] `A(:,1:2) - A(:,4:3)`

Correct!

- [x] `(ones(2,4).*0)'`

Correct!

- [x] `zeros(4,2)`

Correct!

```
A = ones(4);
A(2:3,2:3) = A(1:2,3:4).*5;
```

- [x] `A(:,1:2) - A(:,4:-1:3)`

```
A = ones(4,2);
A(:,1:end) = 0;
```

- [ ] `A'`

Good job!

Quiz score: **140** out of 150