

1. What is a **Matrix**?

- | | |
|--|---|
| a) An equation of over 5 numbers or symbols | b) A set of numbers in rows and columns |
| c) A method of finding the n^{th} value of a series | d) A complicated number system |

2. What is the name of each entry of a matrix?

- | | |
|--------------|------------|
| a) Dimension | b) Element |
| c) Numbers | d) Row |

3.

$$\begin{bmatrix} 8 \\ 6 \\ 7 \end{bmatrix}$$

Name the order of this matrix.

a) 3

b) 3×1

c) 1

d) 1×3

4. $\begin{bmatrix} 2 & 5 & 4 & -5 & 15 & 24 \\ 3 & 7 & 1 & 19 & 6 & 16 \end{bmatrix}$

Name the order of this matrix.

a) 2×6

b) 6×2

c) 12

d) 36

5. How many columns are in a 5×4 matrix?

- a) 5
- b) 20
- c) 9
- d) 4

6.

$$\mathbf{R} = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9.01 \end{bmatrix}$$

In Matrix R (pictured) what element is r_{23} ?

- a) 9.01
- b) 1
- c) 8
- d) 6

7.

$$\begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 5 \end{pmatrix}$$

Classify the matrix

- a) Square matrix, Diagonal matrix
- b) Square matrix, triangular matrix
- c) Triangular matrix, Diagonal matrix
- d) Square matrix, Identity matrix

8. You can multiply a 2×3 matrix by which matrix?

- a) 2×12
- b) 3×12
- c) 2×3
- d) 2×2

9. How many rows are in a 7 x 3 matrix?

a) 21

b) 10

c) 7

d) 3

10. Given matrices A & B:

A is a (4x33) matrix

B is a (33x1) matrix

What are the dimensions of the product of A times B?

a) 4x33

b) 33x1

c) 4x1

d) Matrix does not exist

11.
$$\begin{pmatrix} 4 & 5 \\ 1 & -2 \end{pmatrix} + \begin{pmatrix} 7 & 3 \\ -5 & 4 \end{pmatrix} =$$

Add

a) $\begin{pmatrix} -3 & 2 \\ -4 & -6 \end{pmatrix}$

b) $\begin{pmatrix} 11 & 8 \\ -4 & 2 \end{pmatrix}$

c) $\begin{pmatrix} 10 & 8 \\ -6 & 2 \end{pmatrix}$

d) $\begin{pmatrix} 3 & 2 \\ -6 & -6 \end{pmatrix}$

12.
$$\begin{bmatrix} -2 \\ 0 \\ 3 \\ 6 \end{bmatrix} - \begin{bmatrix} 7 \\ -8 \\ 0 \\ 4 \end{bmatrix}$$

Subtract

a) -9

8

3

2

c) -5

8

3

2

b) 5

-8

3

10

d) -5

-8

3

10

13.
$$5 \begin{bmatrix} -4 & 3 & -2 \\ 6 & -1 & 0 \end{bmatrix}$$

Multiply

a) 1 8 3

11 4 5

c) 20 15 -10

30 -5 0

b) -20 15 -10

30 -5 0

d) 20 -15 10

-30 5 0

14. $\begin{bmatrix} 10 & 5 \\ 2 & -4 \\ -8 & 3 \end{bmatrix} + \begin{bmatrix} 2 & 5 & 4 \\ 3 & 7 & 1 \end{bmatrix}$

Can the operation be performed?

- a) Yes
- b) Sometimes
- c) only Ms. Jones knows
- d) No

15. $5 \begin{bmatrix} 3 & 4 \\ -9 & -1 \end{bmatrix} = \begin{bmatrix} m & p \\ n & q \end{bmatrix}$

find the value of m, n, p and q.

- a) m=20, n=-5, p=15, q=-45
- b) m=-5, n=20, p=-45, q=15
- c) m=15, n = -45, p=20, q=-5
- d) m=8, n=9, p=-4, q=4

16. What must be true in order to ADD two matrices?

- a) The size must be equal.
- b) They must be square.
- c) The column of the 1st must equal the row of the 2nd.
- d) The determinant can't equal 0.

17. Determine whether the matrix product $A_{3 \times 2} B_{2 \times 5}$ is defined. If so, what are the dimensions of the product.

- a) yes , 3 x 5
- b) yes , 2 x 3
- c) no
- d) yes, 2 x 5

18. $\begin{pmatrix} x-2 & 3 \\ -2 & 3y \end{pmatrix} = \begin{pmatrix} 1 & 3 \\ -2 & 15 \end{pmatrix}$

Find the value of x and y if

- a) x=3, y=3
- b) x=2 , y=5
- c) x=3, y=5
- d) x=5, y=3

19.

$$A = \begin{bmatrix} 2 & 5 \\ 7 & 0 \end{bmatrix}$$

$$B = \begin{bmatrix} 6 & 5 \\ 1 & 1 \end{bmatrix}$$

find: $B \times A$

a) 17 15

42 35

c) 47 9

30 5

b) 47 30

9 5

d) not possible because rows do not match

columns

20. Which of the following is NOT a square matrix?

a) Triangular matrix

c) zero matrix

b) Identity matrix

d) Diagonal matrix