Find the matrix product AB, if it is defined.

1) $A = \begin{bmatrix} 1 & 3 & -3 \\ 3 & 0 & 5 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 0 \\ -3 & 1 \\ 0 & 5 \end{bmatrix}$.

A)
$\begin{bmatrix} -12 & -6 \\ 25 & 9 \end{bmatrix}$

C) AB is undefined.

B)
$\begin{bmatrix} 3 & -9 & 0 \\ 0 & 0 & 25 \end{bmatrix}$

D)
$\begin{bmatrix} -6 & -12 \\ 9 & 25 \end{bmatrix}$

Name:_____

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2. MULTIPLE CHOICE Find the value of a_{21}. $A = \begin{bmatrix} 9 & 6 & 0 \\ 4 & 5 & 1 \\ 8 & 3 & 2 \end{bmatrix}$

A 6   B 5   C 4   D 1

3. MULTIPLE CHOICE What are the dimensions of the product of $A_{3 \times 6} B_{3 \times 6}$?

A 3×3 B 6×6 C 6×6 D undefined

4. The table below gives the average length in millimeters of several insects. Describe the type of distribution. Sketch your result.

Length of Insects (mm)						
22	30	35	28	15	90	27
32	55	36	24	60	20	30

5. The outlier in this data set is zero. How does excluding the outlier have an effect on the mean, median, and mode of the data set?

Grams of Sugar in Grape Juice (per serving)					
15	0	36	18	30	10
30	15	35	30	36	30
36	30	38	16	35	16

6. A pencil holder contains only six blue pencils and three red pencils. If two pencils are drawn at random, in succession, what is the probability that both are blue?

7.   A manufacturing plant produces a special kind of lightbulb.

- Each lightbulb produced has a 0.040 probability of being defective.
- Five lightbulbs are chosen at random from the production line.

To the nearest thousandth, what is the probability that exactly two of the five bulbs will be defective?

A   0.014

B   0.016

C   0.018

D   0.020

What is the meaning of the base of the function $y = -\log(x)$?

8.   A   As y decreases by 1, x increases by a factor of 10.

B   As y decreases by 1, x increases by 10.

C   As y increases by 1, x increases by a factor of 10.

D   As y increases by 1, x increases by 10.

The table below shows the probability distribution of the number of televisions in each house in a community.

Televisions	Probability
0	0.04
1	0.38
2	0.27
3	x
4	y
5 or more	0.13

9.

What is the probability that a house in the community will have at least 3 televisions?

A   0.69

B   0.31

C   0.18

D   0.09

10.   Anna and Zach each have $600 to invest. Anna's investments earn a rate of 10.5%, and Zach's investments earn a rate of 6.5%. *Approximately*, how much more money will Anna have than Zach when Zach's investments are worth $900? (Assume continuous compounding.)

A $184

B $241

C $255

D $264