PROBABILITY:-

Q.1. In a single throw of two dice, find the probability of getting a total of at most 9.

Q.2. A bag 'A' contains 3 white and 2 black balls while the bag 'B' contains 2 white and 5 black balls. One of the bag is chosen at random and a ball is drawn from it. What is the probability that the ball is white?

Q.3. One number is chosen at random from the number 1 to 21. Find the probability that may be a prime number.

Q.4. What is the probability that a leap year has 53 Sundays?

Q.5. A card is drawn at random from a pack of 52 playing cards. What is the probability that the card drawn is neither a spade nor a queen?

Q.6. Ticket numbered 1 to 20 are mixed up together and then a ticket is drawn at random. What is the probability that the ticket has a number which is a multiple of 3 or 7?

EQUATION OF A LINE:-

Q 1. Find the equation of the line parallel to $3x + 2y = 8$ and passing through the point (0, 1).

Q 2. The line $4x – 3y + 12 = 0$ meets the x-axis at A. Write down the co-ordinates of A. Determine the equation of the line passing through A and perpendicular to $4x – 3y + 12 = 0$.

Q 3. If $3y – 2x – 4 = 0$ and $4y – ax – 2 = 0$ are perpendicular to each other, find the value of a.

Q 4. Find the equation of a line passing through (2, –3) and inclined at an angle of 135º with positive direction of x-axis.

Q 5. ABCD is a square. The co-ordinates of A and C are (3, 6) and (–1, 2) respectively. Write down the equation of BD.

Q 6. Write down the equation of the line whose gradient is 3/2 and which passes through P, where P divides the line segment joining A(–2, 6) and B(3, –4) in the ratio 2:3.

MATRICES:-

Q 1.

$$If \begin{bmatrix} x & x+y \\ 0 & 4 \end{bmatrix} = \begin{bmatrix} 1 & 5 \\ 0 & 4 \end{bmatrix} \text{ find x and y.}$$

Q 2.

$$If \ \begin{bmatrix}8\\5\end{bmatrix}+\begin{bmatrix}x\\y\end{bmatrix}=\begin{bmatrix}8\\6\end{bmatrix} find \ x \ and \ y$$

Q 3.

$$If \ A=\begin{bmatrix}1 & 4 & -1\\2 & 6 & 5\end{bmatrix} and \ B=\begin{bmatrix}3 & -2 & -6\\2 & 0 & -7\end{bmatrix} \text{find A + B and A - B.}$$

Q 4.

$$Evaluate \ x \ and \ y \ if \begin{bmatrix}2 & 1\\0 & -1\end{bmatrix}\begin{bmatrix}x\\y\end{bmatrix}=\begin{bmatrix}5\\4\end{bmatrix}$$

Q 5.

$$If \ A=\begin{bmatrix}0 & 2\\0 & 3\end{bmatrix}, \ B=\begin{bmatrix}4 & 6\\0 & 0\end{bmatrix} show \ that \ AB=0$$

Q 6.

$$If \ B=\begin{bmatrix}1 & 1\\8 & 3\end{bmatrix}, Evaluate \ B^2-4B.$$

Q 7.

$$if \ P=\begin{bmatrix}3 & 1\\-1 & 2\end{bmatrix}, find \ the \ value \ of \ P^2-5P+7\,I,$$

Where I as a unit matrix of order 2 X 2.