TAMILNADU STATE BOARD EDUCATION (SSLC)

10th MATHS.

G. RAJESH. MSC. B.Ed MBA
PGT IN MATHS.
8754834604.

COMPULSORY 5 MARKS (MOST Important).

1. If $\begin{pmatrix} 2 \\ 3 \\ 1 \end{pmatrix} A = \begin{bmatrix} 2 & -4 & 6 \\ 3 & -6 & 9 \\ 1 & -2 & 3 \end{bmatrix}$ then find (i) the order of the Matrix

   (ii) the elements of the matrix A.

2. A Card is draw from a pack of 52 Cards. Find the Probl- of getting a Queen or a diamond or a black Card.

3. Find the square root : $289x^4 - 612x^3 + 970x^2 - 684x + 361$

4. $A = \begin{bmatrix} 1 & 2 & 1 \\ 2 & -1 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 2 & -1 \\ 1 & 4 \\ 0 & 2 \end{bmatrix}$ then Find $(AB)^T = B^T A^T$. verify.

5. If $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ and $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ show that $A^2 - (a+d)A = (bc - ad) I_2$.

6. Find the equation of a line through the given pair of Points $(2,3)$ and $(-7, -1)$.

7. If $A = \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$, Show that $A^2 - 4A + 5I_2 = 0$.

8. Find the area of the shaded region a given figure
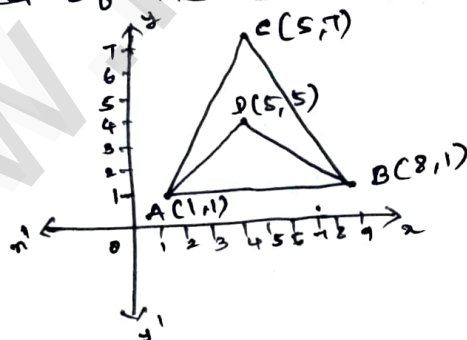
9. An object travels under the influence of gravity in time 't' seconds is given by $s(t) = \frac{1}{2} gt^2 + at + b$ where (g is the acceleration due to gravity) a, b are the Constants. check if the function $s(t)$ is one – one.

10. A metallic sheet in the form of a sector of a circle of radius 21cm has Central angle of 216°. The Sector is made into a cone by being the bounding radii together. Find the volume of the cone formed.

11. The function 't' which maps temperature in Celsius (c) into temperature in Fahrenheit (F) is define by $t(c) = F$ where $F = \frac{9}{5}c + 32$, Find (i) $t(0)$ (ii) $t(28)$ (iii) $t(-10)$ (iv) The value of C when $t(c) = 212$. (v) The temperature when the Celsius value is equal to the Fahrenheit value.

12. The Sum and product to the intercepts of a straight line are 1 and −6 respectively. Find the equation of the straight lines.

13. The sum of heart rate readings taken fives times for Kundavai and Kulazhi are 400 and 360 respectively And their projected deviations are 3.16 and 2.0 respectively. If you were a doctor who would you treat immediately?

14. The probl- of an event A occuring is 0.5 and B occuring is 0.3. If A and B are mutually exclusive events, then find the probl- of (i) $P(A \cup B)$ (ii) $P(\bar{A} \cup B)$ (iii) $P(A \cup \bar{B})$.

15. 10, 20, 15, 12, 25 from given data find C.V.

16. Three unbiased Coins are tossed once. Find the probl- of getting atmost 2 tails or atleast 2 heads.

17. If α, β are the roots of $7x^2 + ax + 2 = 0$ and if $\beta - \alpha = \frac{-13}{7}$. Find the value of a.

18. $f(x) = 3x+1$, $g(x) = x+3$ are two function, then show that $gff(x) = fgg(x)$.

19. If $f(x) = 2x+3$; $g(x) = 1-2x$ and $h(x) = 3x$. Prove that $fo(goh) = (fog)oh$.

20. simplify:- $\dfrac{\frac{1}{p} + \frac{1}{q} + r}{\frac{1}{p} - \frac{1}{q} + r} \times \left(1 + \dfrac{q^2 + r^2 - p^2}{2qr}\right)$.