

系級：_____ 學號：_____ 姓名：_____

1. $\lim_{x \rightarrow \pi} \frac{\sin x}{x - \pi} = ?$

2. $\frac{d}{dx}(\ln x)$

3. $\sin(\alpha + \beta) = ?$
 $\cos(\alpha + \beta) = ?$

4. $\int_0^{2\pi} \cos 2\theta \sin \theta d\theta = ?$

5. $\int e^x \sin x dx = ?$

6. $\int \frac{1}{x-1} dx = ?$

7. $\int_0^2 \int_{\frac{x}{2}}^1 e^{-y^2} dy dx = \int_{?}^? \int_{?}^? e^{-y^2} dx dy = ?$

8. $[A]_{m \times n} = \begin{bmatrix} 1 & 2 & 3 \\ 8 & 5 & 7 \\ 11 & 0 & 2 \\ 2 & 7 & 7 \end{bmatrix}$, $m = ?$ $n = ?$

9. $\begin{vmatrix} 2 & 4 & 6 \\ 0 & 6 & 16 \\ -1 & 1 & 5 \end{vmatrix} = ?$

10. $A = \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}$ 請求出 A^{-1} 。