

義守大學 102 學年度碩士班入學招生考試試題

系所別	電機工程學系、電子工程學系、 機械與自動化工程學系	考試日期	102/3/16
考試科目	工程數學(常微分方程)	頁碼/總頁數	1/1

※此為試題卷，請將答案填寫在答案卷內，未寫於答案卷內者，不予計分。

※本科目不可使用計算機。

- (1) Solve the differential equation: $\frac{dy}{dx} = y^2 - 16$. (10 分)
- (2) Solve the differential equation: $(8x + 4y)dx + (4x - 8y^3)dy = 0$. (10 分)
- (3) Solve the differential equation: $\frac{dy}{dx} + y = e^{-3x}$. (15 分)
- (4) Solve the differential equation: $\csc y dx + \sec x dy = 0$. (10 分)
- (5) Solve the differential equation: $y'' - y = \cos^2 x$. (15 分)
- (6) Solve the differential equation: $y''' - 5y'' + 3y' + 9y = 0$. (10 分)
- (7) Solve the following equation: $x^2 y'' + xy' - y = 0$. (10 分)
- (8) Solve the following equation: $y''' - 3y'' + 3y' - y = x - 4e^x$. (20 分)