

WS 4 Partid ANSWERS

PART 1:

- ① $-\frac{1}{12} \cos 4x^3 + C$
- ② $\frac{1}{12} (e^5 - e)$
- ③ $\frac{2}{3} \ln|3x^2 + 9| + C$
- ④ $\frac{5}{882} (14x^9 - 1)^7 + C$
- ⑤ $\sin\sqrt{\frac{\pi}{2}} - \sin\sqrt{\frac{\pi}{4}}$
- ⑥ $\frac{1}{2} \ln 8 - \frac{1}{2} \ln 4$ or $\frac{1}{2} \ln 2$
- ⑦ 0

PART 2

- ① $\frac{1}{8} x^8 + \frac{2}{5} x^5 + \frac{1}{2} x^2 + C$
- ② $\frac{1}{18} (x^3 + 1)^6 + C$
- ③ $-\frac{5}{3x} - \frac{5}{3} \ln|x| + C$
- ④ $\ln|\ln x| + C$
- ⑤ $\frac{1}{3} x^3 - \frac{3}{2} x^2 + \frac{11}{2} x - \frac{13}{4} \ln|2x+1| + C$
- ⑥ $\frac{1}{6} \ln|9x^2 + 16x^{3/2}| + C$
- ⑦ $4 \tan e^x + C$

PART 3 (IBP)

- ① $\frac{4}{5} x \sin 5x + \frac{4}{25} \cos 5x + C$
- ③ $\frac{1}{10} e^{2\pi} - \frac{1}{10}$
- ④ $x \arcsin x + \sqrt{1-x^2} + C$
- ⑤ $x(\ln x)^2 - 2x \ln x + 2x + C$
- ⑦ $-4/5$
- ⑥ $-\frac{1}{4} x^2 \cos 4x + \frac{1}{8} x \sin 4x + \frac{1}{32} \cos 4x + C$