

Math 125 D Winter 2024
Mid-Term Exam Number One
January 25, 2024
Answers

There were two versions of the exam.

Problem 1(a) on Version A had an integrand of $3x^6 - 5 + \sin 4x$.

Version A:

1. (a) $\frac{3}{7}x^7 - 5x - \frac{1}{4}\cos 4x + C$
(b) $\frac{4}{3}x^3 + \frac{8}{5}x^{5/2} + \frac{1}{2}x^2 + C$
(c) $\frac{1}{2}x^2 + x + \ln|x| - \frac{1}{x} + C$
2. (a) $\frac{21}{2} = 10.5$
(b) $\frac{1}{12}\sin 4$
(c) $\frac{116}{15}$
3. $\frac{1}{10}\ln 11$
4. $\sqrt{2} - \frac{3}{4}$
5. 33.2039 m/s²
6. 1.04747286...

Version B:

1. (a) $\frac{2}{3}x^6 - 7x - \frac{1}{3}\cos 3x + C$
(b) $3x^3 + \frac{12}{5}x^{5/2} + \frac{1}{2}x^2 + C$
(c) $\frac{1}{2}x^2 + x - \frac{1}{x} - \frac{1}{2}x^{-2} + C$
2. (a) 16
(b) $\frac{1}{10} - \frac{1}{10}\cos 5$
(c) $\frac{5^{5/2}}{10} - \frac{5^{3/2}}{6} - \frac{1}{10} + \frac{1}{6}$
3. $\frac{1}{9}\ln 10$
4. $\frac{13}{10} = 1.3$
5. 23.4787 m/s²
6. 4.60517...