2025 Winter MAT136 Exam (Practice Exam) – Solutions.

with updates to Solutions for A8, A9, A11 AND A4, A5, A12, B3b(ii), B4b and more

A1. [**2 marks**] Let $v(t)$ be the velocity in metres per second of a particle at time t, measured in seconds. The particle travels in a straight line towards a measuring device from $t = 0$ to $t = 3$ and then travels away from the device, along the same line, from $t = 3$ to $t = 10$. Write one or a sum of more than one integral involving $v(t)$ that can be used to calculate the distance between the particle at $t = 10$ and its starting position at $t = 0$.

Solution: $\int_0^{10} v(t)dt$ or $\left| \int_0^{10} v(t)dt \right|$ are both arguably correct answers.