Practice worksheet | Vector calculus

Arc length in two and three dimensions

Name: _____ Date: _____

6 questions | 12 marks

1. Find length of $(5t, 12t)$ on $0 \leq t \leq 1$. [2 marks]

2. Find length of $(3\cos t, 3\sin t)$ on $0 \leq t \leq \pi/2$. [2 marks]

3. Find length of $(\cos t, \sin t, 2t)$ on $0 \leq t \leq 2\pi$. [2 marks]

4. Set up length for (t, t^2) on $0 \le t \le 1$ without evaluating. [2 marks]

5. Find length of $(t^2, \frac{2}{3}t^3)$ on $0 \le t \le 1$. [2 marks]

6. For $(\cos t, \sin t)$ on $0 \le t \le 4\pi$, find distance and displacement. [2 marks]