Names Laval Obs Laval
Department: Civil Engineering
Marie No: 19/ENG $03 / 027$
Course: Mail 10,2

Answers

$$
\begin{aligned}
& \text { c.) } r=x_{i}+y_{j}+z_{k} \\
& r=t_{1}+t^{2} j+t^{3} k \\
& \frac{d r}{d t}=i+2 t j+3 t^{2} k \\
& A+t=1 \quad \frac{d r}{d t}=i+2 j+3 k \\
& \left|\begin{array}{l}
d r \\
d t
\end{array}\right|=\sqrt{(1)^{2}+(2)^{2}+(3)^{2}}=\sqrt{14} \\
& T=d r / d t \\
& \left|\begin{array}{l}
d r \\
d t
\end{array}\right|=i+\frac{2 j}{\sqrt{14}}+3 k
\end{aligned}
$$

2.1

$$
\text { 2. } \begin{aligned}
& A=4 t^{3} j+5 k, B=2 t^{2} i+4 t j \\
& G=A \times B=\left(4 t^{3} j+5 k\right) \times\left(2 t^{2} i+4 t j\right) \\
& G=16 t^{4} \\
& \Rightarrow \int_{0}^{1} 16 t^{4} d t \\
&=\int_{0}^{1} \frac{16 t^{5}}{5}+C \\
& \Rightarrow \frac{16}{5}
\end{aligned}
$$

Math 102 assignments

