Practice worksheet | Vector calculus

Parametric gradients and tangent directions

Name: _____ Date: _____

6 questions | 12 marks

1. Find $\frac{dy}{dx}$ for $x = t^2 + 1, y = 3t,\ t$ nonzero. [2 marks]

2. Find the tangent at 2 for $x = t, y = t^3$. [2 marks]

3. Find the tangent at 0 for $(\cos t, \sin t)$. [2 marks]

4. Use a limit to find the tangent at 0 for $x = t^3, y = t^2$. [2 marks]

5. Give a vector tangent equation at 1 for (t, t^2, t^3). [2 marks]

6. Find the horizontal tangent of $x = 2t, y = t^2 - 4t$. [2 marks]