Pure mathematics assessment
Topic: Differentiation

Name:

Date:

1. Differentiate $y = x^3$. [1]

2. Differentiate $y = x$. [1]

3. Differentiate $y = 2x^4$. [1]

4. Differentiate $y = 2x^3 - 2x^2 + 1$ [2]

5. Differentiate $y = (3x^2 + x)^2$. [3]

6. Differentiate $y = x^{-3}$. [2]

7. Differentiate $y = \frac{1}{2x^4}$. [2]

8. Differentiate $y = \frac{\sqrt[3]{x^5}}{5} + \frac{9}{x^2}$. [3]

9. Given that $y = 5x^2 + 3x - 3$, find x if $\frac{dy}{dx} = 7$. [5]

10. Find the equation of the tangent to the curve $y = x^2 - 4$ at the point $(2, 0)$. [5]

11. Find the equation of the normal to the curve $y = 3 - x^2$ where the x-coordinate is 0.

[5]

Prepared by: John Sylvester Tabdi

LIVEWORKSHEETS