

DIFFERENTIATION & APPLICATIONS (Q 6 & 7, PAPER 1)

LESSON NO. 1: ALGEBRAIC DIFFERENTIATION

2006

6 (a) Differentiate $\sqrt{x}(x+2)$ with respect to x

2005

6 (a) Differentiate with respect to x

(i) $(1+7x)^3$

2004

6 (a) Differentiate $\frac{1}{2+5x}$ with respect to x .

2003

6 (a) Differentiate $\sqrt{1+4x}$ with respect to x .

2002

6 (a) Differentiate $(x^4+1)^5$ with respect to x .

2001

6 (a) Differentiate $\frac{x}{1+x^2}$ with respect to x .

(b) (i) Given that $y = \sqrt{x}$, what is $\frac{dy}{dx}$?

ANSWERS

2006 6 (a) $\frac{3}{2}\sqrt{x} + \frac{1}{\sqrt{x}}$

2002 6 (a) $\frac{dy}{dx} = 20x^3(x^4+1)^4$

2005 6 (a) (i) $21(1+7x)^2$

2001 6 (a) $\frac{dy}{dx} = \frac{1-x^2}{(1+x^2)^2}$ (b) (i) $\frac{dy}{dx} = \frac{1}{2\sqrt{x}}$

2004 6 (a) $\frac{dy}{dx} = -\frac{5}{(2+5x)^2}$

2003 6 (a) $\frac{dy}{dx} = \frac{2}{\sqrt{1+4x}}$