

Quiz 1

[1] Find the limits:

$$(a) \lim_{x \rightarrow 1} \frac{\sqrt{x} - 2}{x^3 - 2} \quad (b) \lim_{x \rightarrow 1} \frac{\sqrt[4]{x} - 1}{x^3 - 1} \quad (c) \lim_{x \rightarrow 0} \frac{\sin 2x}{x^3 + \tan x} \quad (d) \lim_{x \rightarrow \infty} \frac{x^2 - 1}{x + x^3}$$

[2] Find y' where:

$$(a) y = 3x^{-2} + 2 \cos x \quad (b) y = 3 + \tan x^3 \quad (c) y = \tan^{-3} x + (\sec x)^3$$
$$(d) y = x^3 \cdot \sin 3x \quad (e) y = (2x + \cos x)^8 \quad (f) y = \frac{x^4 - 1}{x + \sin x}$$

Quiz 2

[1] Find the limits:

$$(a) \lim_{x \rightarrow 1} \frac{\sqrt{x} - 1}{x^3 - 2} \quad (b) \lim_{x \rightarrow 2} \frac{\sqrt{x} - \sqrt{2}}{x^3 - 8} \quad (c) \lim_{x \rightarrow 0} \frac{\tan 3x}{\sin 2x + \tan x} \quad (d) \lim_{x \rightarrow \infty} \frac{x^3 - 1}{x + x^2}$$

[2] Find y' where:

$$(a) y = x^5 + 2 \cos 2x \quad (b) y = 2x + \tan x^3 \quad (c) y = \tan^{-3} x + (\csc x)^3$$
$$(d) y = x^3 \cdot \sec 3x \quad (e) y = \left(\frac{x}{2} + 3 \sin x\right)^8 \quad (f) y = \frac{x^4 - 1}{x + \cos x}$$