

Show all your work! No calculators, notes, or colleagues are allowed to assist you.

1. Find the limit (algebraically), if it exists:

(a) $\lim_{h \rightarrow 0} \frac{(3+h)^{-1} - 3^{-1}}{h}$

(b) $\lim_{t \rightarrow 0} \frac{\sqrt{1+t} - \sqrt{1-t}}{t}$

TURN PAGE OVER...

2. Show (using theory from Section 2.3) that $\lim_{x \rightarrow 0} x^4 \cos\left(\frac{2}{x}\right) = 0$

3. Prove (using ϵ, δ) that $\lim_{x \rightarrow 1} (3 - 2x) = 1$