3. Which of the following statements must be false?

a) $\frac{d}{dx}(x\tan x) = x\tan x + x\sec^2 x$ T

b) $\frac{d}{dx}\left(\frac{3}{4+x^2}\right) = \frac{-6x}{(4+x^2)^2}$ T

c) $\frac{d}{dx}\sqrt{1-x} = \frac{1(-1)}{2\sqrt{1-x}}$ F

d) $\frac{d}{dx}(\ln x^3) = \frac{3}{x}$

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4. A particle moves along a straight line with equation of motion $s = t^3 + t^2$. Find the value of t at which the acceleration is zero.

a) $-\frac{2}{3}$ b) $-\frac{1}{3}$ c) $\frac{2}{3}$ d) $\frac{1}{3}$ e) $-\frac{1}{2}$

$v = 3t^2 + 2t$

$a(t) = 6t + 2 = 0 \rightarrow t = -1/3$
