Clue 3:

Q1: a) $y = \sec x = \frac{1}{\cos x}$  $h = 0.001$  $x = \frac{\pi}{4}$  /5

$IROC = \lim\limits_{h \to 0} \dfrac{f(x+h) - f(x)}{h}$ ✓

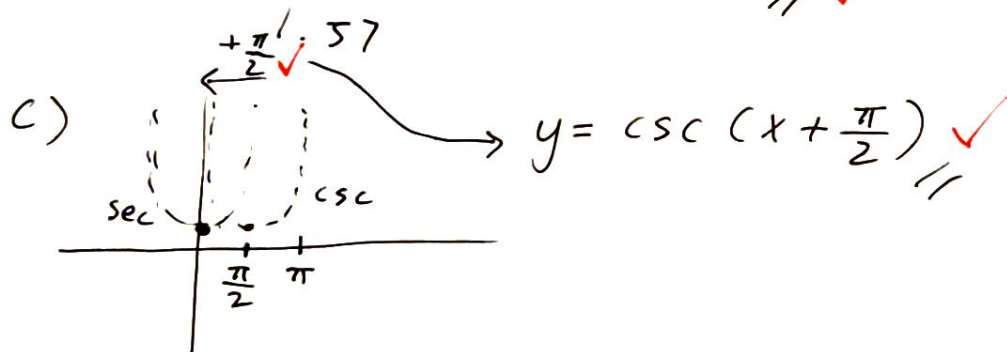$= \lim\limits_{h \to 0} \dfrac{\frac{1}{\cos(3 + 0.001)} - \frac{1}{\cos(3)}}{0.001}$ ✓

$= \lim\limits_{h \to 0} \; -1.009965 + 1.010108666$ ✓

$= \lim\limits_{h \to 0} \dfrac{1.4346 \times 10^{-4}}{0.001}$ ✓

$= \lim\limits_{h \to 0} \; 0.14 //$ ✓

b) $AROC = \dfrac{f(x_2) - f(x_1)}{x_2 - x_1}$ ✓ $= \dfrac{\frac{1}{\cos \frac{3\pi}{4}} - \frac{1}{\cos \frac{\pi}{4}}}{\frac{3\pi}{4} - \frac{\pi}{4}}$ ✓  /3

$= \dfrac{-2.828}{\frac{\pi}{2}}; 57$ $= -1.8 //$ ✓

$+\frac{\pi}{2}$ ✓

c)



$\rightarrow y = \csc\left(x + \frac{\pi}{2}\right)$ ✓ //

sec    csc

$\frac{\pi}{2}$    $\pi$

/2

Total for clue 3: /10