

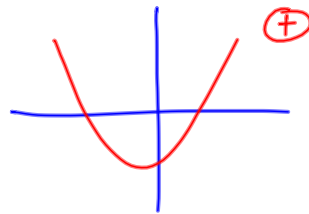
Sketching Functions



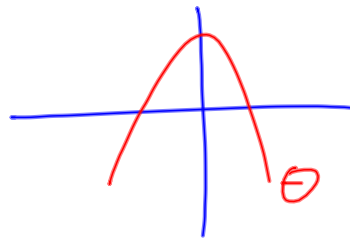
"Sketch"

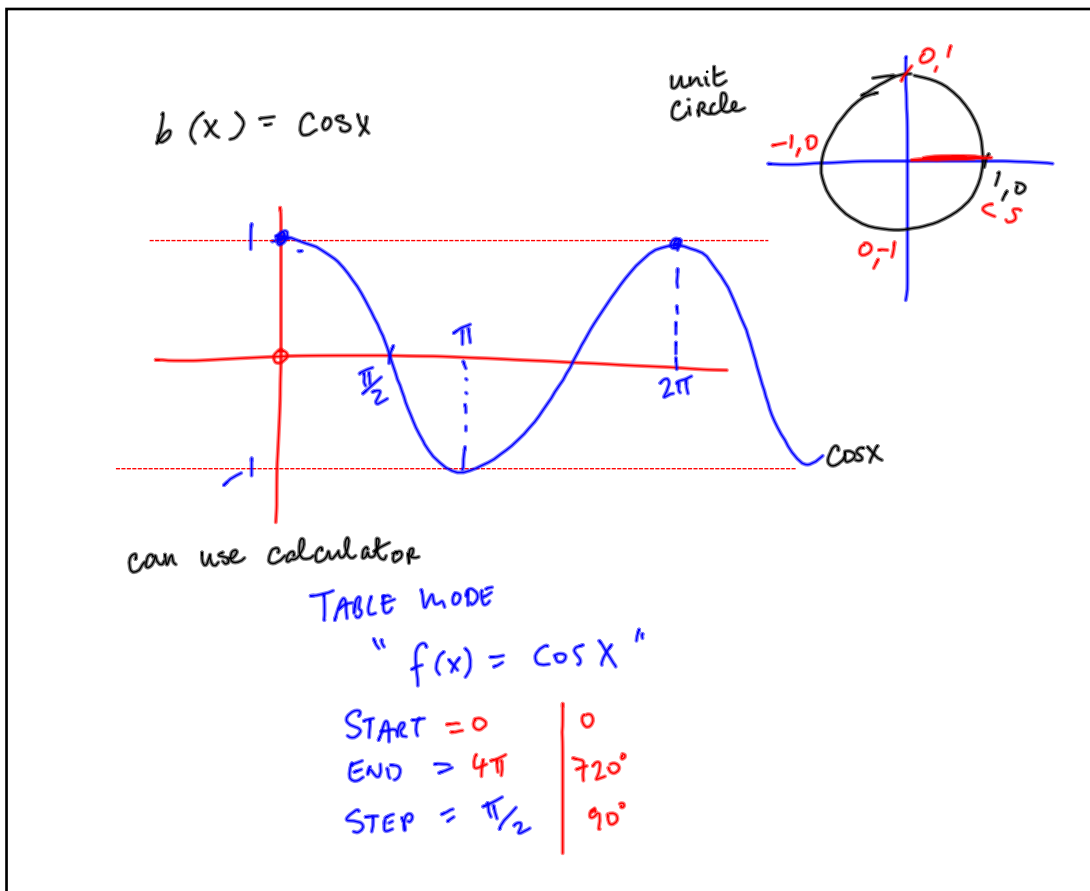
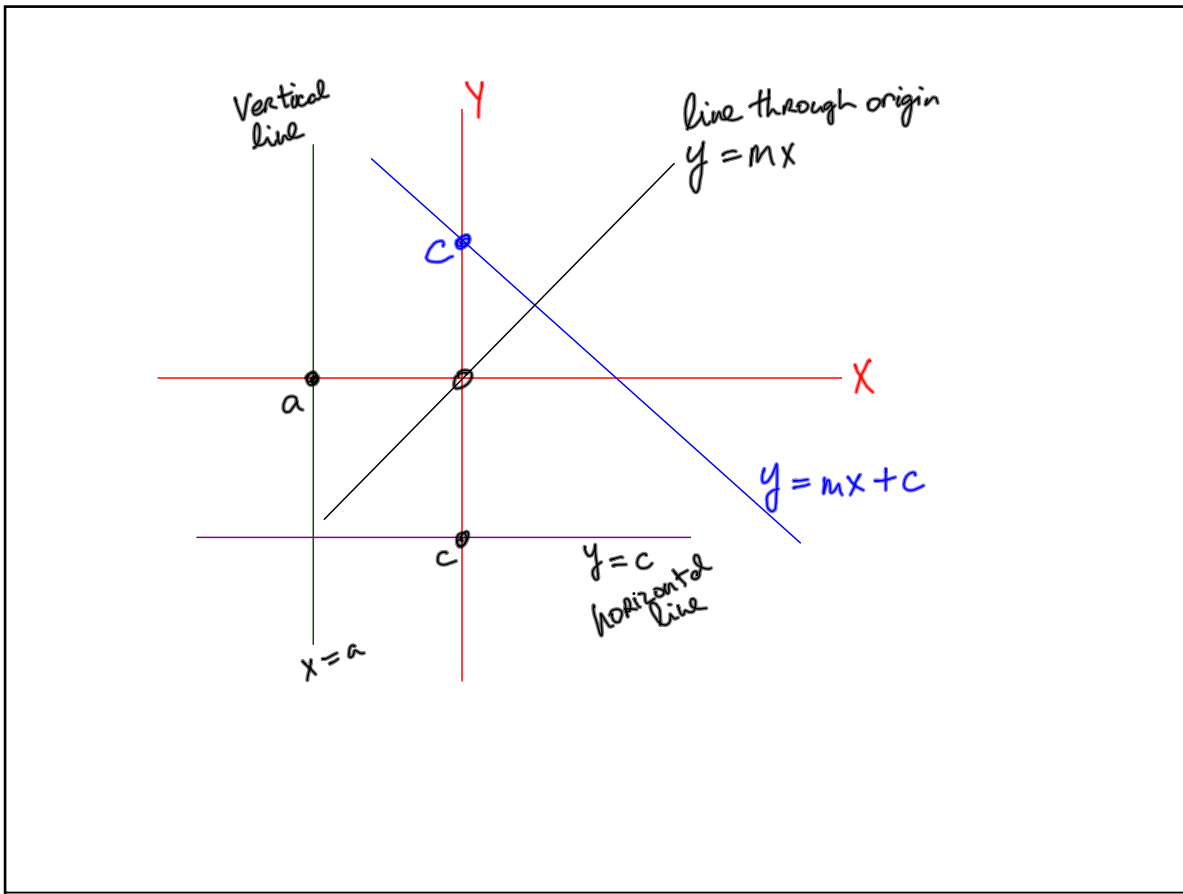
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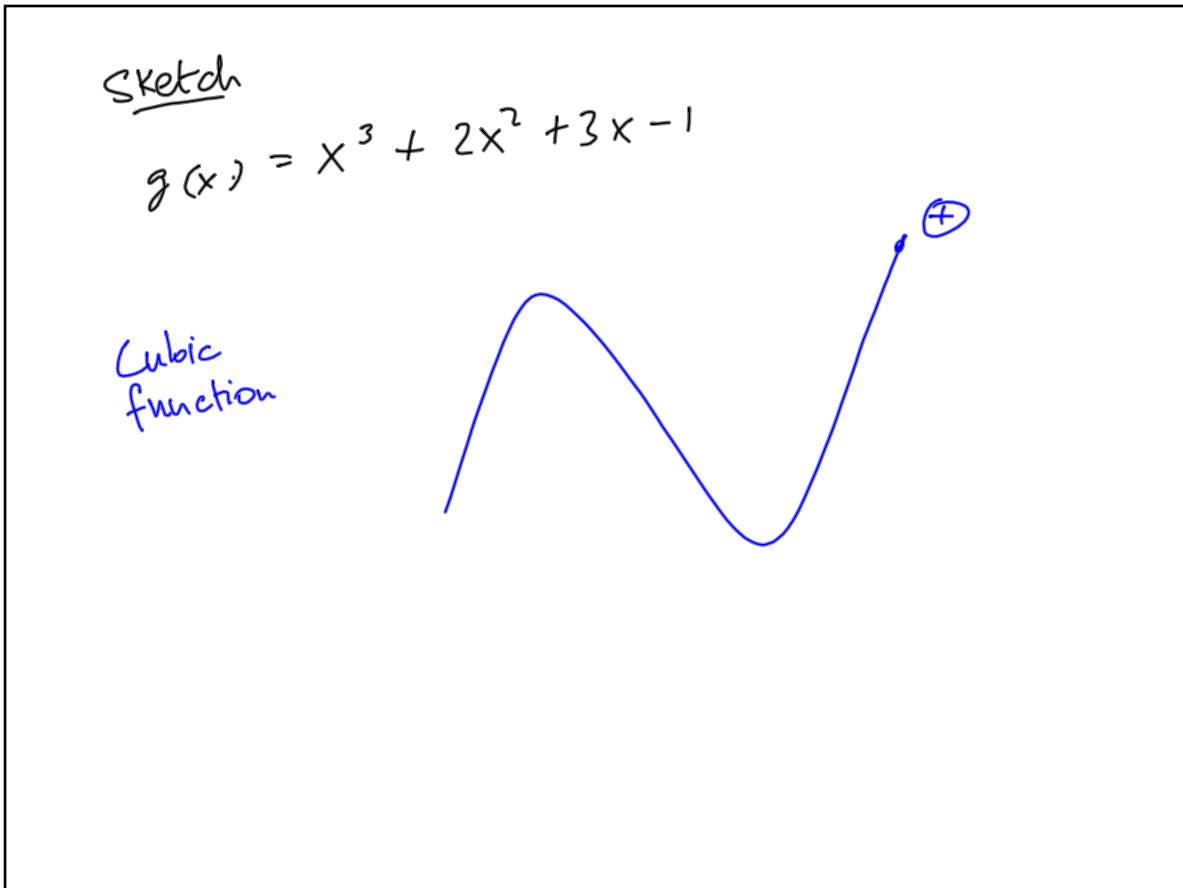
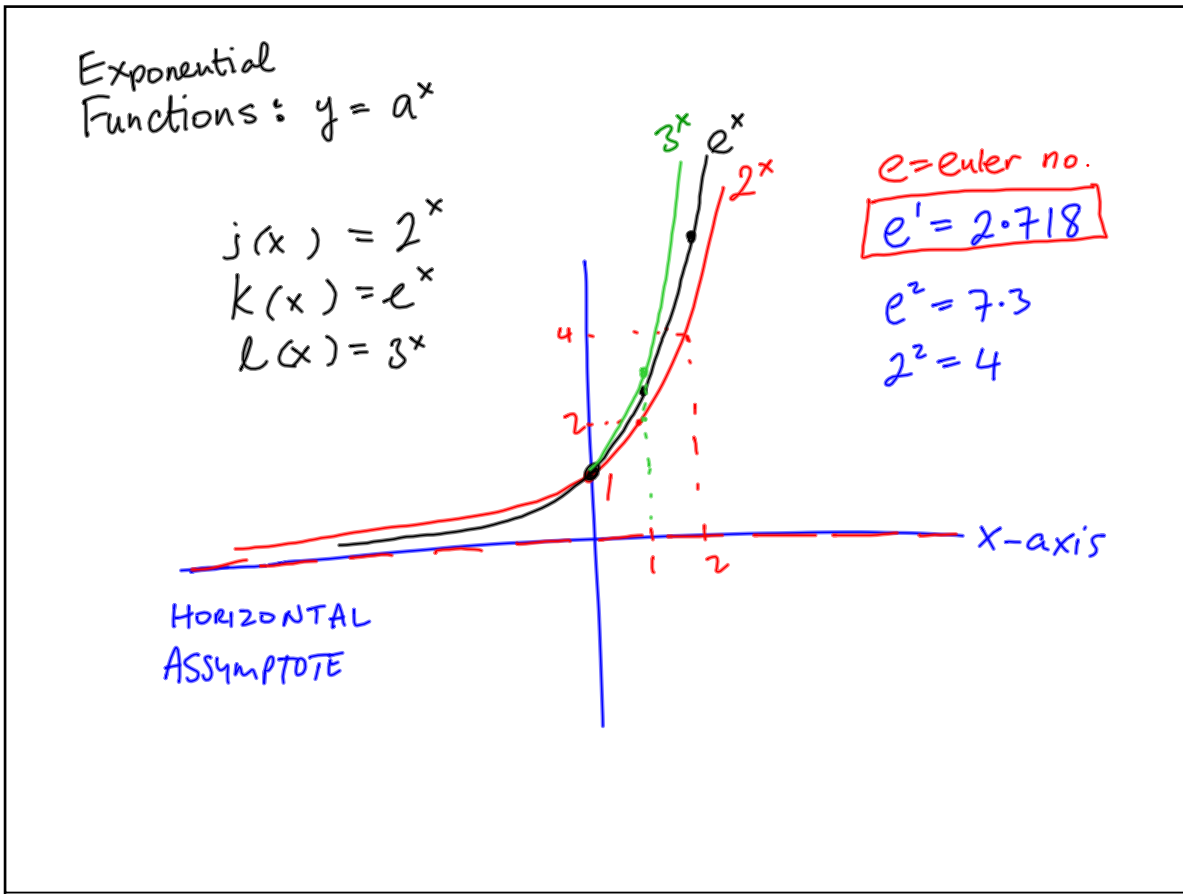
$$* f(x) = x^2 + bx + c$$

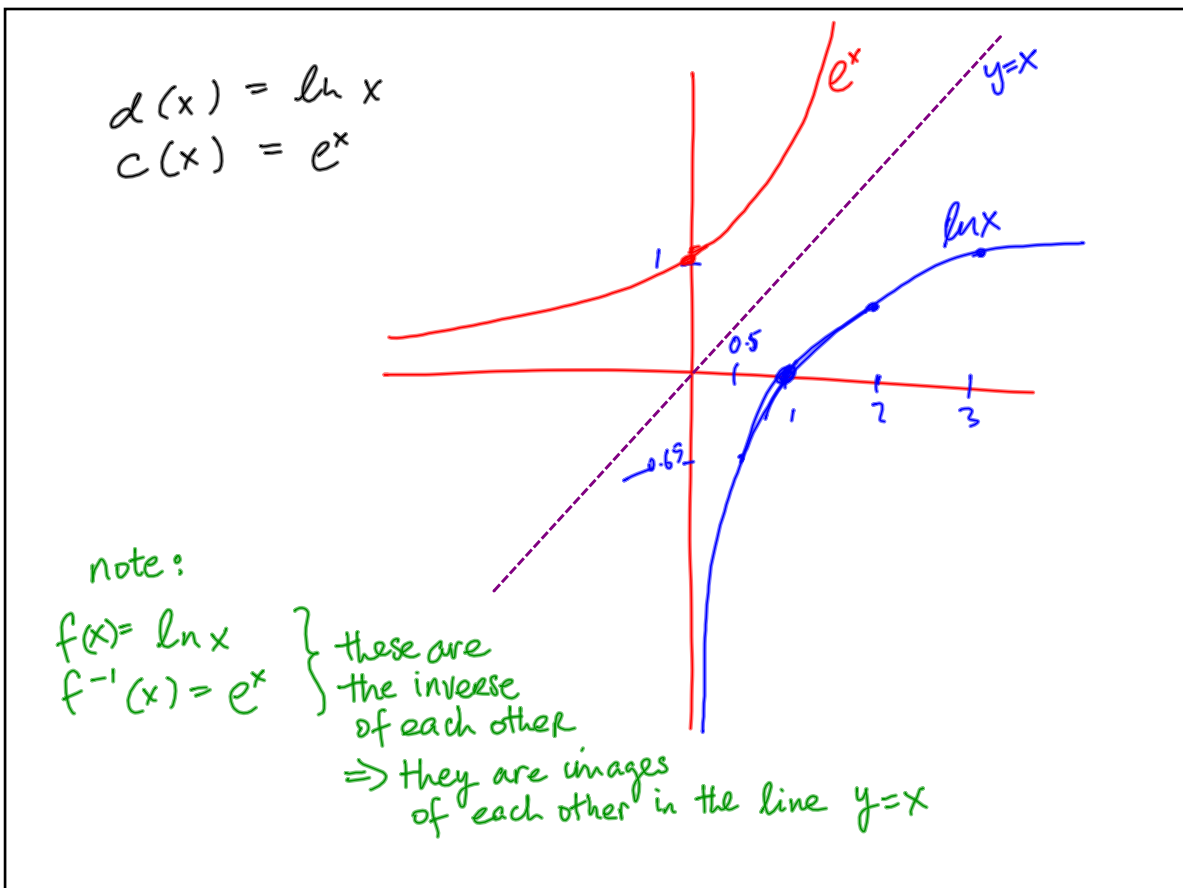
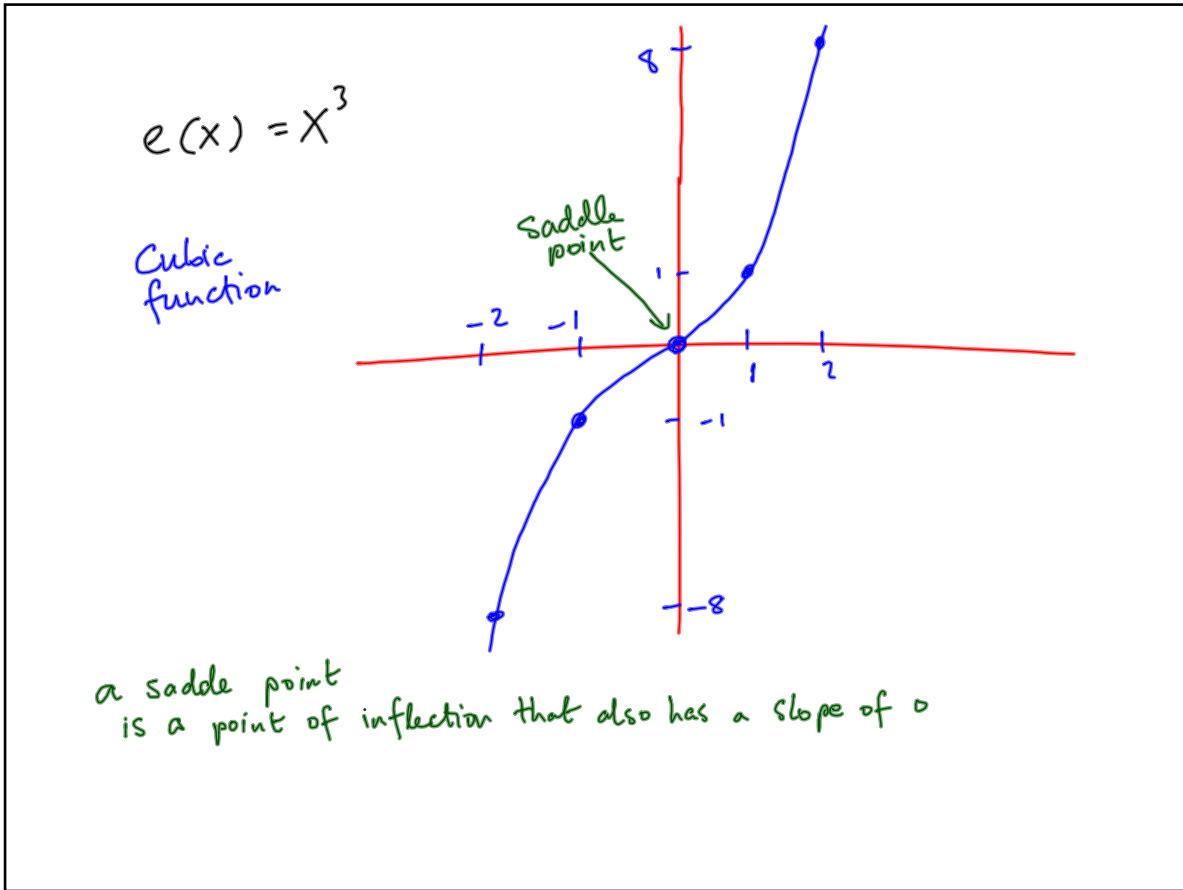


$$g(x) = -x^2 + bx + c$$

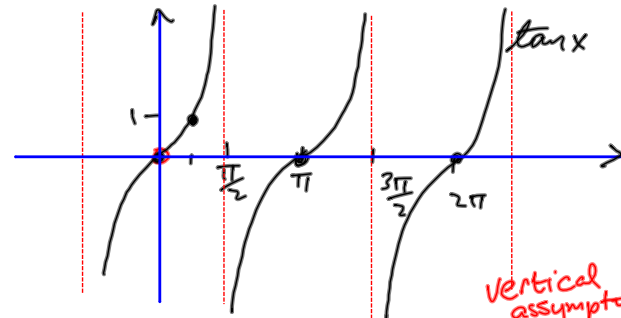








$h(x) = \tan x$

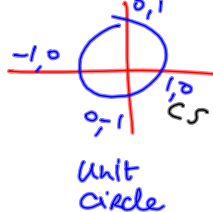


$\tan x = \frac{\sin x}{\cos x}$

\Rightarrow when $\cos x = 0$, $\tan x$ doesn't exist

$\cos x = 0$
 $x = \frac{\pi}{2}, \frac{3\pi}{2}$

Vertical asymptote



Unit Circle

Could use calculator:

" $f(x) = \tan x$ "
 Start = 0, end = 270°, step = 45°

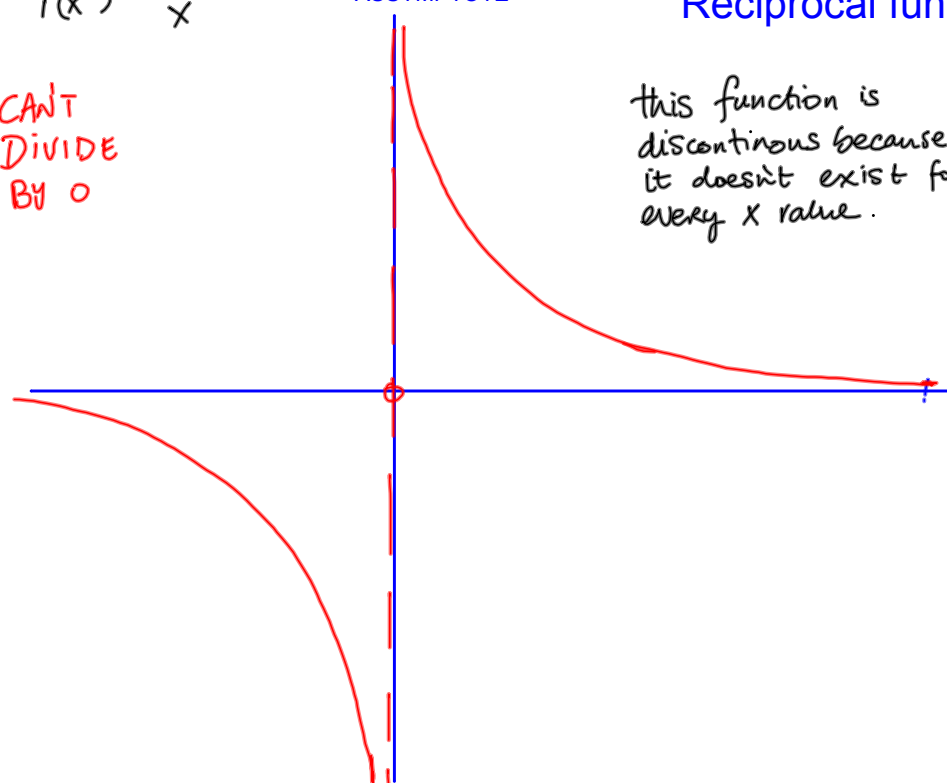
$i(x) = \frac{1}{x}$

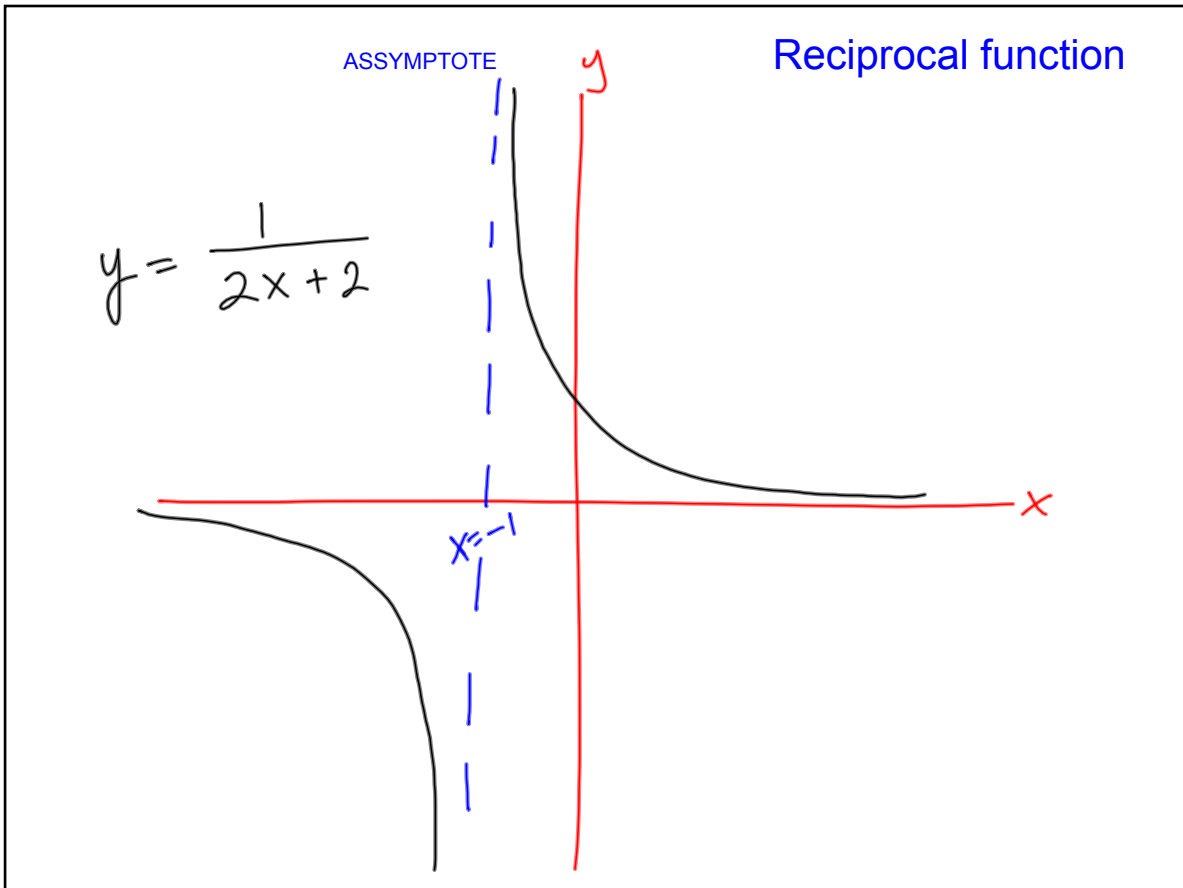
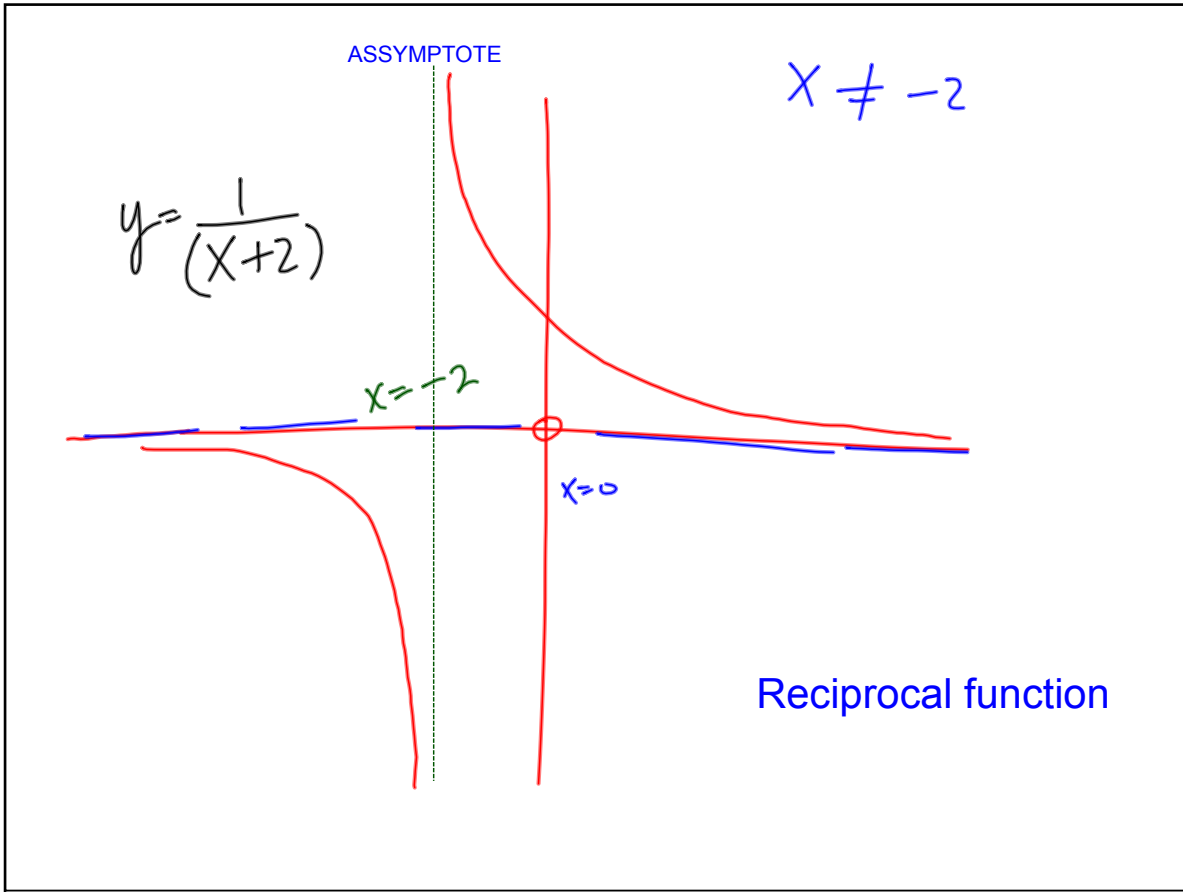
Reciprocal function

ASSYMPOTOTE

CAN'T DIVIDE BY 0

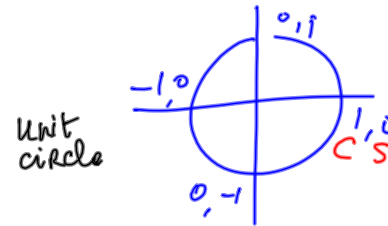
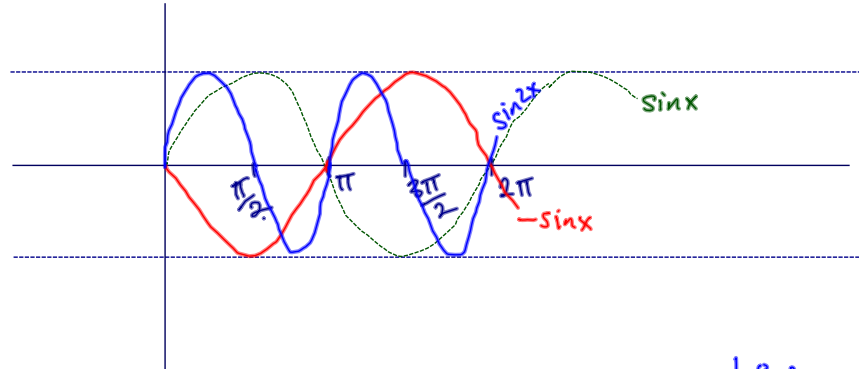
this function is discontinuous because it doesn't exist for every x value.



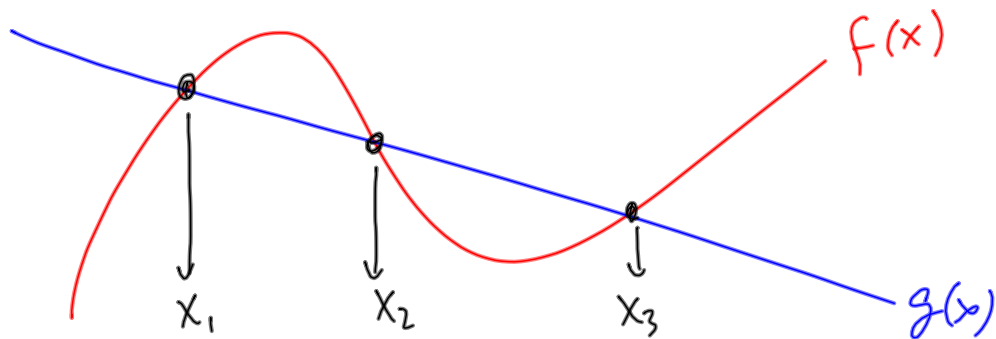


$$j(x) = -\sin x \Rightarrow \text{Range } [-1, 1], \text{ Period } 2\pi$$

$$h(x) = \sin 2x \Rightarrow \text{Range } [-1, 1], \text{ Period } \pi$$



Solve



$$f(x) = g(x)$$