We did chapter

Media speech 17 sep

What should
- Media piece
- Stray fell
- 3 reason why it strong

_____

Math
what is pass?
- ask questio
- 1 hour lay review
- 2% attache to it
- get help hoost help
- 1 : 1 tutoring
- when
100% not sure
many hour for devote for hw?
diff for d sudden
UCI as many hour as pos to get A

HW prob of Sec 1.1-1.3, 1.5
Quiz 1 next Wednesday covering Sec 1.1-1.3

1 you can find the zero on X intercept
- go into calc
- select the 2 optio

Gia perfer the set notas

$\Rightarrow$ Ex: $y = x^2 - 1$

$\quad$ D: $(-\infty, \infty)$

$\quad$ R: $[-1, \infty)$

Domain

(Case ①) Polynomial : $(-\infty, \infty)$

$\qquad$ Ex $5x^3 - 2x + 1$

(Case ②) Rational function

$\qquad f(x) = \dfrac{\boxed{}}{\boxed{}}$ $\quad \boxed{} \neq 0$ and solve

$\qquad\qquad\qquad\qquad$ locate the point on a number line $\cup$ find domain

Suppose $f(x) = \dfrac{-5x}{3x + 2}$ $\quad\Big|\quad$ $3x + 2 \neq 0$

$\qquad\qquad\qquad\qquad\qquad\qquad$ $x \neq -\dfrac{2}{3}$

$\longleftarrow \quad \overset{0}{\underset{-\frac{2}{3}}{\big|}} \quad \longrightarrow$
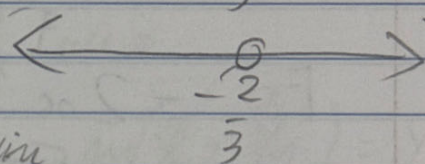
$-\dfrac{2}{3}$ is ✗ ✗ domain

D: $\left(-\infty, -\dfrac{2}{3}\right) \cup \left(-\dfrac{2}{3}, \infty\right)$

$\qquad\qquad\qquad$ even

(Case ③) $f(x) = \sqrt{\boxed{}}$ $\qquad \boxed{} \geq 0$ solve

use a number line find the domain

$f(x) = \sqrt{3x + 5}$ $\qquad 3x + 5 \geq 0$ $\quad x \geq -\dfrac{5}{3}$

$\longleftarrow \underset{-\frac{5}{3}}{\bullet}\text{\scriptsize//////////}$
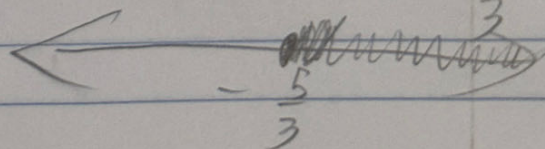
$D: \left[-\dfrac{5}{3}, \infty\right)$

Case 4: $f(x) = \dfrac{}{\sqrt{\boxed{}}}$ $\boxed{} > 0 \ \checkmark$ solve

used a numberline

to find D

Ex $f(x) = \dfrac{-2x}{\sqrt{-2x-6}}$

$-2x - 6 > 0$ $\xleftarrow{\hspace{1.5cm}}$

$\quad -2x > 6$ -3

$\quad\quad x < -3$

$D: (-\infty, -3)$ $\square$

find the domain   17. 18. 21

Ex $-2x^3 + \dfrac{1}{3}x - 5$

Range $(-\infty, +\infty)$

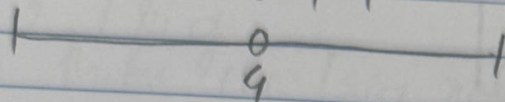Domain $(-\infty, +\infty)$

17 $f(x) = -1 + \sqrt{x+2}$

$\quad\quad x + 2 \geq 0$

$\quad\quad\ x \geq -2$

$[-2, +\infty)$

19) $g(x) = \dfrac{3}{x-4}$

$x - 4 \neq 0$

$x \neq 4$

```
|————————o————————|
         0
         4
```

$(-\infty, 4) \quad U \quad (4, +\infty)$

21) $g(x) = \sqrt{\dfrac{7}{x-5}} = \dfrac{\sqrt{7}}{\sqrt{x-5}}$

you should show

$x - 5 > 0$

$x > 5$
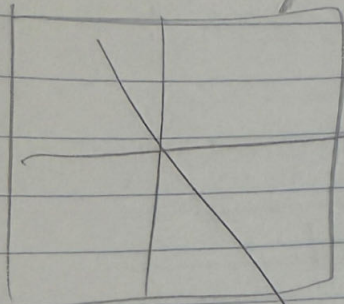
```
←————————o~~~~~~~→
         5
```
you do
this

$(5, +\infty)$

1.2 Basic Classes of Fun+

deriving
formula

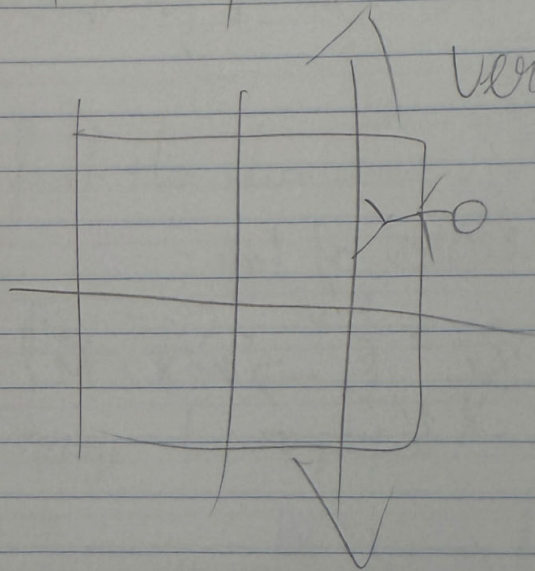$m = \dfrac{y_2 - y_1}{x_2 - x_1} \longrightarrow m(x_2 - x_1) = y_2 - y_1$
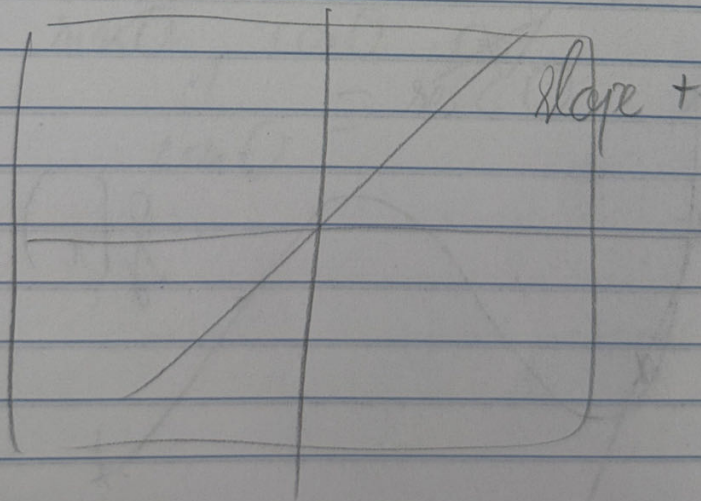
slope +

Descending line slope :-
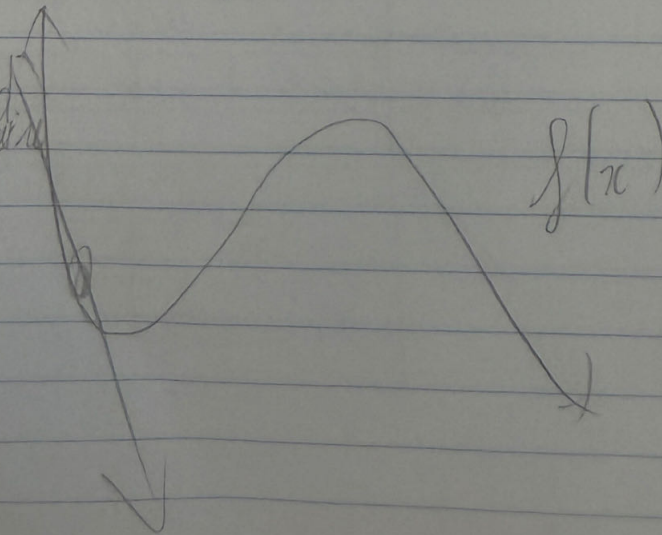
$$Ha : y = b$$
$$m = 0$$
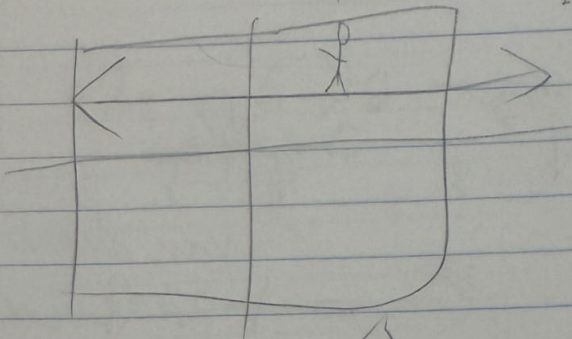
Vertical line
$$m = DNE$$
DOES Not Exist

Why

Determined
Slope of tangent line

$$f(x)$$

AUR of chang is the estimate of the slope of a tangent line

1.3 Trig
Know the Trig relation for nat vech quiz

RH: $\sin^2 + \cos^2 = 1$

$$\frac{\sin^2}{\sin^2} + \frac{\cos^2}{\sin^2} = \frac{1}{\sin^2}$$

$$1 + \tan^2 = \csc^2 \quad (\text{cosecant})$$

$$\frac{\sin^2}{\cos^2} + \frac{\cos^2}{\cos^2} = \frac{1}{\cos^2}$$

$$\tan^2 + 1 = \sec^2 \quad (\text{secant})$$

EX: Simplify $(\csc \theta)(\sec \theta)(\tan \theta)(\cos \theta)$
$\sec \quad \csc$

change anything in term of sign + cos

$(\csc \theta)(\sec \theta)(\tan \theta)(\cos \theta)$

$$\frac{1}{\sin \theta} \cdot \frac{1}{\cos \theta} \cdot \frac{\sin \theta}{\cos \theta} \cdot \cos \theta$$
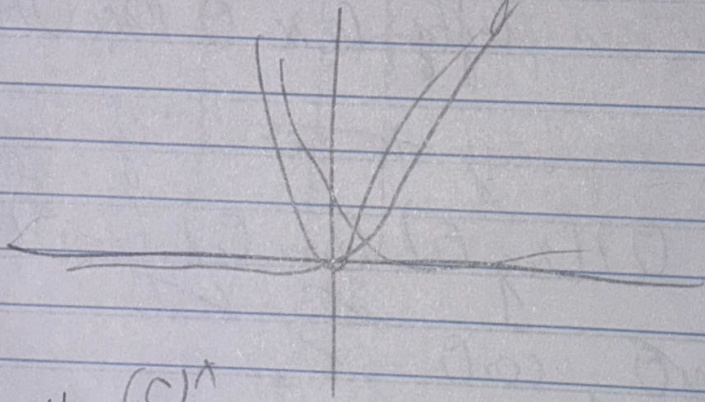
$$= \frac{1}{\cos \theta} = \sec \theta$$

Inverse Funt
- Swit G D U R
Switch other stuff

Horizontal line test
tell us draw a hoz line to relation, inverse
is func on X. Is it one - one or X

1.5 Exponential and Logarithmic Function

y

Exponential growth
Bacterial growth
Exponential decay

$y = (5)^x$

$y = \left(\frac{1}{3}\right)^x$

Rationalizing the denominator $\rightarrow \dfrac{x}{\sqrt{y}} = \dfrac{x}{\sqrt{y}} \cdot \dfrac{\sqrt{y}}{\sqrt{y}} = \dfrac{x\sqrt{y}}{y}$

Example rewrite in exponential form

$\sqrt[3]{8x^5} = \sqrt[3]{8} \cdot \sqrt[3]{x^5}$

$= 2x^{5/3}$

Review properties of exponent and other

$$\log_b \textcircled{1} = \textcircled{0} \;\Rightarrow\; b^0 = 1$$

base   Exponent

Natural log $\log_e x = \ln x$ have a base of e

$\times \; e \approx \pi$ a irrational num   Important Scient func

Ex: $\ln e^{\#} = \#$

Ex: $e^{\ln (5x+1)} = 5x + 1$

the reason why e an $\pi \neq$, large number cause it to complex, log Function X write all digit
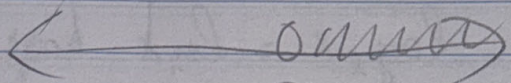
Ex: ph in chem (log in ph) power of something

- Earth quak is log, Mag 3 ≈ 3.8>
  so much, $10^3 < 10^{3.8}$ (big $\uparrow$)
- $\Rightarrow$ make easier

Domain of log □ or ln □ is funct

Way of determ , Type 0 ⇒ Error

Type −5 ⇒ Error

log − v0 ⇒ DNE

□ > 0 and solve

used a number line using

domain

Ex : $f(x) = \ln(x-2)$

$x - 2 > 0$

$x > 2$

2

$D : (2, \infty)$