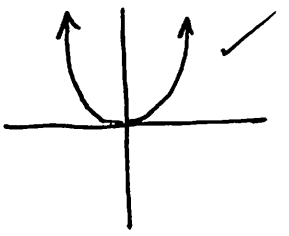
Wednesday, august 29

Parabolas:

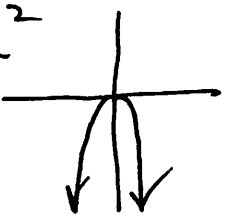
$y = x^2$

$y = x^2 + 3$

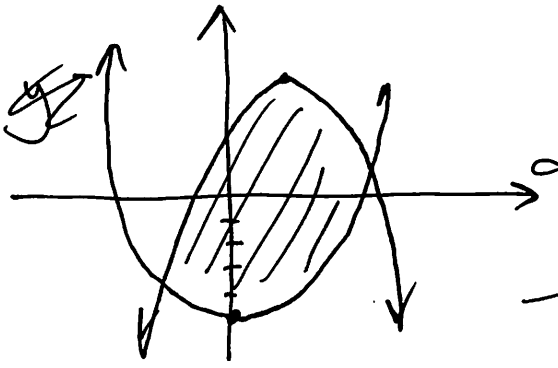


$y = -x^2$

$y = -4x^2$



$y = \frac{+1}{2}x^2 - 5$



find the AREA of the bounded region...

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$ comp. interest

$n=1$ $n=4$ $n=12$ $n=360$

$n=\infty$: another formula

$n = 4$

$r = .0214$

$t = 10$ yr.

P = initial $ (10,000)

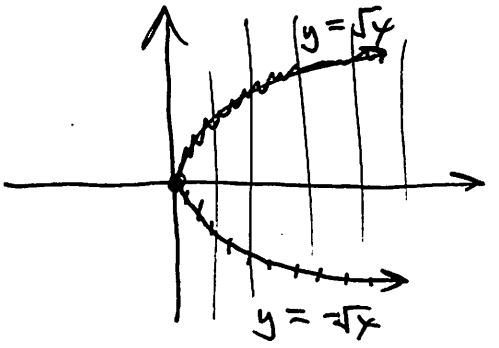
$$A = 10{,}000\left(1 + \frac{.0214}{4}\right)^{4(10)}$$

A ↑ future amt.

$A = 12{,}379.16$

$x = y^2$

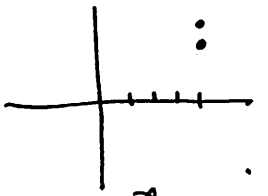
$\pm\sqrt{x} = y$



functions:

$(7{:}00, 91°)$
$(7{:}00, 75°)$

$(4, 10.49)$
$(4, 9.98)$



$(2, 108')$
$(2, 71')$

- each 1st element is assigned a UNIQUE 2nd element.

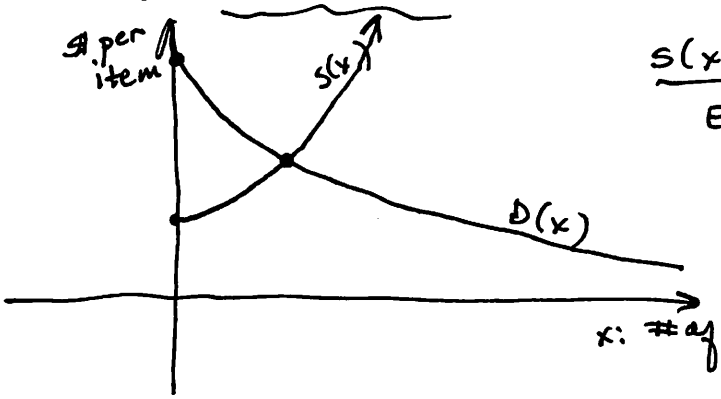
RATIONAL EXPONENTS:

$$8^{-2/3} = \frac{1}{8^{2/3}} = \frac{1}{(\sqrt[3]{8})^2} = \frac{1}{\sqrt[3]{(8)^2}}$$

(2: power; 3: root index)

$$(a+b)^{-1} = \frac{1}{a+b}$$

SUPPLY & DEMAND FUNCTIONS:



$S(x) = D(x)$

EQUILIBRIUM POINT

x_E

R.3:

SETS roster $\{1, 2, 3, 4\}$

$[1, 4]$ interval notation

$\{x \mid x \geq 1 \text{ and } x \in \mathbb{R}\}$ REAL NUMBERS

"is an element of"

$[1, \infty)$

$f(x) = \sqrt{x-5}$ ✓

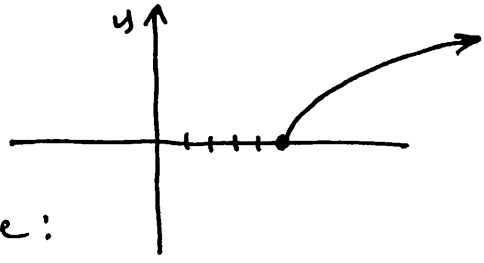
$\sqrt{-1} = i$

$-1 = i^2$

find the domain:

$x - 5 \geq 0$

$x \geq 5$



find the range:

$y \geq 0$

$x = 3$ VERT ASYM

$f(x) = \dfrac{2}{x+3}$

domain: $x \neq -3$

$(-\infty, -3) \cup (-3, \infty)$

model the real world:

1.) $t \geq 0$

2.) $v(t)$: +, −, 0

3.) $a(t)$: −, +, 0

R.S:

quadratic functions:

$f(x) = ax^2 + bx + c$ parabola

VERTEX $\left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right)\right)$

find vertex, all intercepts and graph:

$f(x) = 3x^2 - 4x - 2$

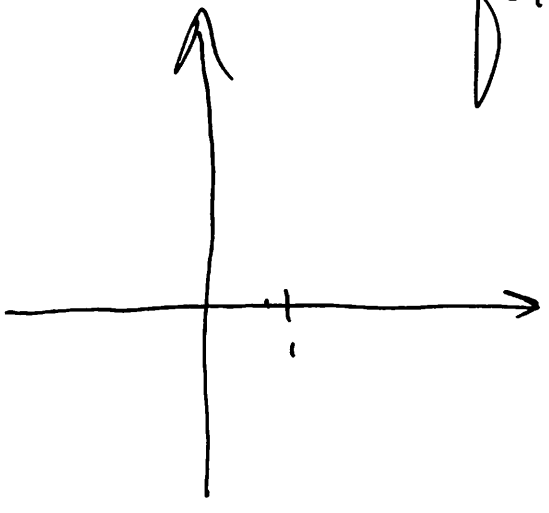
V $\left(\frac{2}{3}, -\frac{10}{3}\right)$

$\frac{-b}{2a} = \frac{-(-4)}{2(3)} = \frac{4}{6} = \frac{2}{3}$

$f(2/3) = 3(2/3)^2 - 4(2/3) - 2$

$= \frac{1}{3} \cdot \frac{4}{3} - \frac{8}{3} - 2$

$= \frac{4}{3} - \frac{8}{3} - \frac{6}{3} = \frac{-10}{3}$



y-int: (set $x=0$)

$f(0) = 3(0)^2 - 4(0) - 2 = -2$

$(0, -2)$

x-int: (set $y=0$)

$0 = 3x^2 - 4x - 2$

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$x = \frac{4 \pm \sqrt{4^2-4(3)(-2)}}{2(3)}$$

$$x = \frac{4 \pm \sqrt{16+24}}{6}$$

$$x = \frac{4 \pm \sqrt{40}}{6} =$$

121-003

Subject: My Office hour
From: Chuan Xu <cxu9@ncsu.edu>
Date: 8/29/18, 6:49 PM
To: John Griggs <jrgriggs@ncsu.edu>

Dear Prof. Griggs,

I have asked the ladies. They haven't finalized their office hour. My first choice is 3 to 4 pm Wednesday. Does this work for you?

Thank you. LOCATION: _____

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Best regards,

Chuan Xu