

GRAPHING REVIEW

1) e $x^{2/3} + y^{2/3} = 4^{2/3}$

x-axis
Sub in -y

$$\sqrt[3]{x^2} + \sqrt[3]{y^2} = \sqrt[3]{4^2}$$

y-axis
Sub in -x

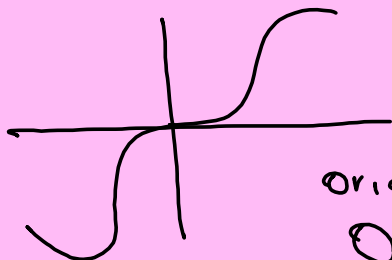
x-axis $\sqrt[3]{x^2} + \sqrt[3]{(y)^2} = \sqrt[3]{16}$ yes

origin
Sub in -x, -y

y-axis $\sqrt[3]{(-x)^2} + \sqrt[3]{y^2} = \sqrt[3]{16}$ yes

origin $\sqrt[3]{(-x)^2} + \sqrt[3]{(-y)^2} = \sqrt[3]{16}$

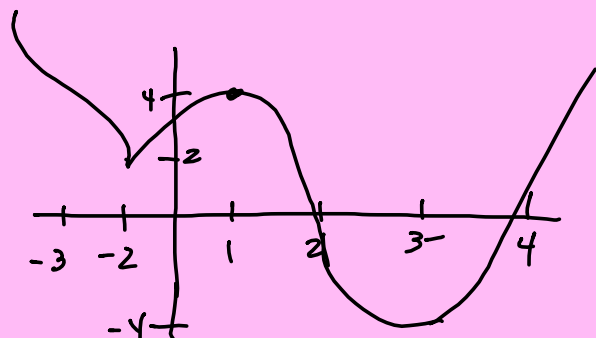
Even $f(-x) = f(x)$
y-axis
Odd $f(-x) = -f(x)$
origin



origin symm =
Odd func.

e) $f(x) = \sqrt[3]{x^5 - x}$
 $f(-x) = \sqrt[3]{(-x)^5 - (-x)}$
 $= \sqrt[3]{-x^5 + x}$
 $= -\sqrt[3]{x^5 - x}$

ODD



Inc. $(-2, 1)$ $(3, \infty)$

Dec. $(-\infty, -2)$ $(1, 3)$

Rel max $(1, 4)$

Abs max None

Rel min $(-2, 2)$
 $(3, -4)$

Abs min $(3, -4)$

Vertex of Parabola

$$y = -\frac{2}{3}x^2 - 4x + 1$$

$$x = \frac{-b}{2a} = \frac{4}{2\left(\frac{-2}{3}\right)} = \frac{4}{-\frac{4}{3}}$$

$$4 \cdot \frac{-3}{4}$$

$$= -3$$

$$y = -\frac{2}{3}(-3)^2 - 4(-3) + 1$$

$$-\frac{2}{3} \cdot 9$$

$$-6 + 12 + 1 = 7$$

$$\boxed{(-3, 7)}$$

$$0 = -\frac{2}{3}x^2 - 4x + 1$$

$$x = \frac{4 \pm \sqrt{16 - 4\left(-\frac{2}{3}\right)(1)}}{2\left(-\frac{2}{3}\right)}$$

$$\frac{4 \pm \sqrt{16 + \frac{8}{3}}}{-4/3}$$

$$-4/3$$

$$4 \pm \sqrt{\frac{56}{3}}$$

$$-4/3$$

Inverse Functions

5) $f \circ g$ or $g \circ f = x$

6) horizontal line test

- 7) 1) Switch x & y
 2) Solve for y

Find f^{-1}

~~$f(x) = \frac{x+3}{2x-5}$~~

~~$(2y-5)x = \frac{y+3}{2y-5} (2y-5)$~~

$2xy - 5x = y + 3$

$2xy - y = 5x + 3$

~~$y(2x-1) = \frac{5x+3}{2x-1}$~~

$f^{-1} = \frac{5x+3}{2x-1}$