

p. 11 #46.



#52



#50



#54



p. 21

#18(c) $\frac{1}{100}$

#24 (c) $\frac{512}{125}$

#42(a) $6a^3b^2$

$$\#18c \left(\frac{1}{2}\right)^4 \left(\frac{5}{2}\right)^{-2} = \frac{1}{16} \cdot \frac{4}{25} = \frac{1}{100}$$

p. 32

#34. $r^2 - 4rs + 4s^2$

p. 42

Ex

$$5 - \frac{x+2}{x-1}$$

$$\frac{5}{1} \cdot \left(\frac{x-1}{x-1}\right)$$

$$\frac{5x-5}{x-1} - \frac{-x-2}{x-1} = \frac{4x-7}{x-1}$$

Ex

$$-3 - \frac{2-x}{2x+1}$$

$$\frac{-3(2x+1)}{2x+1} - \frac{2-x}{2x+1}$$

$$\frac{-6x-3-2+x}{2x+1}$$

$$\frac{-5x-5}{2x+1}$$

Ex

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

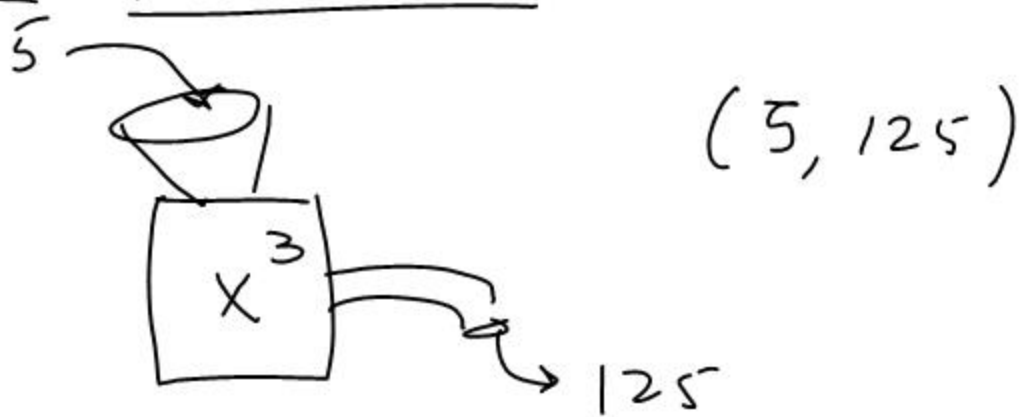
$$= \frac{2y-3x}{3y} \cdot \frac{2x}{x+2y}$$

$$= \frac{4yx - 6x^2}{3yx + 6y^2}$$

~~$\frac{2y}{x} \cdot \frac{3}{2y}$~~

chapter 2

Functions



A function is a set of ordered pairs (x, y) in which no x -value is used more than once.

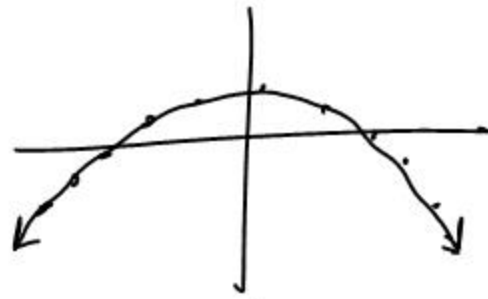
Ex. $\left\{ (2, 4), (2, 5), (3, 7), (5, 9) \right\}$ is NOT a function

↑ ↑

Ways to represent a function

- 1) A list of points. $\left\{ (2, 1), (3, 4) \right\}$
- 2) Equation $y = 2x + 5$
 $\left\{ (0, 5), (1, 7), (-1, 3), \dots \right\}$

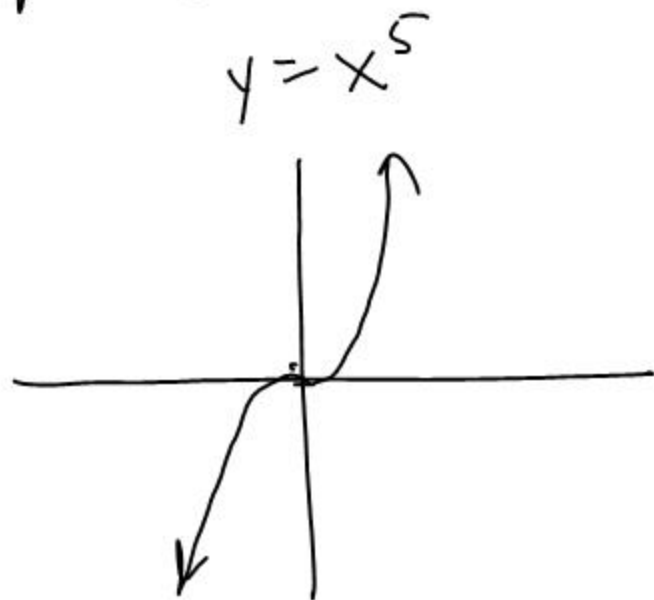
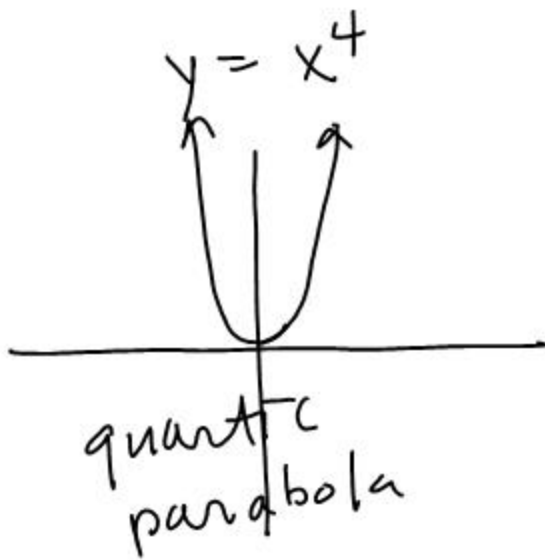
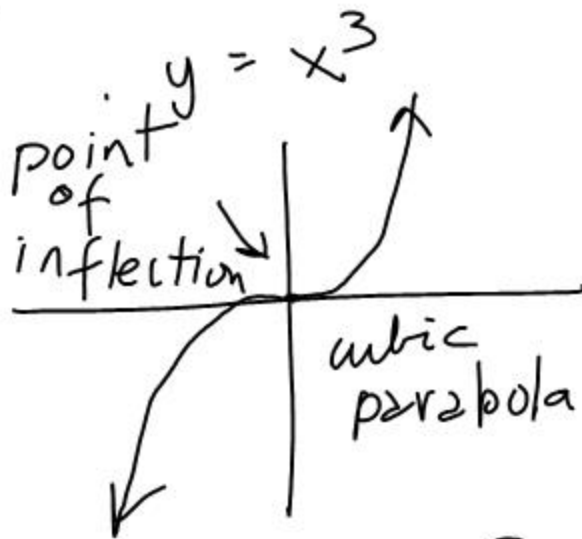
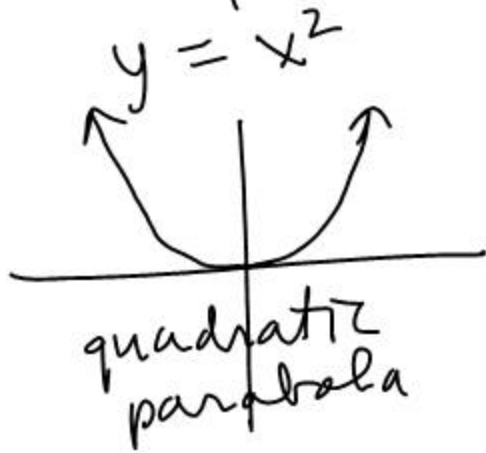
3) graph



4) verbal description

Sketching Functions equation \rightarrow graph

power functions

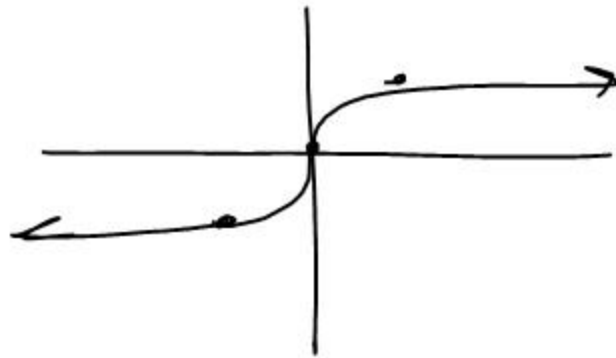


Root Functions

$$y = \sqrt{x}$$



$$y = \sqrt[3]{x}$$



$$\boxed{\sqrt{4} = 2}$$

$$x^2 = 4$$

$$x = \pm 2$$

$$\sqrt{x^2} = \sqrt{4}$$

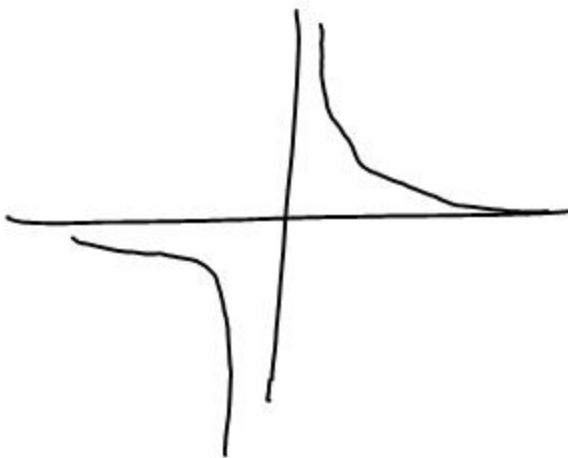
$$|x| = 2$$

$$x = \pm 2$$

$$\sqrt{(-5)^2} = \sqrt{25} = 5$$

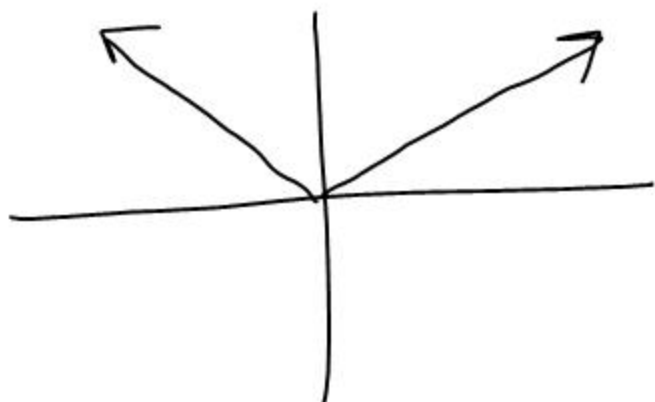
Reciprocal functions

$$y = \frac{1}{x}$$



absolute value

$$f(x) = |x|$$

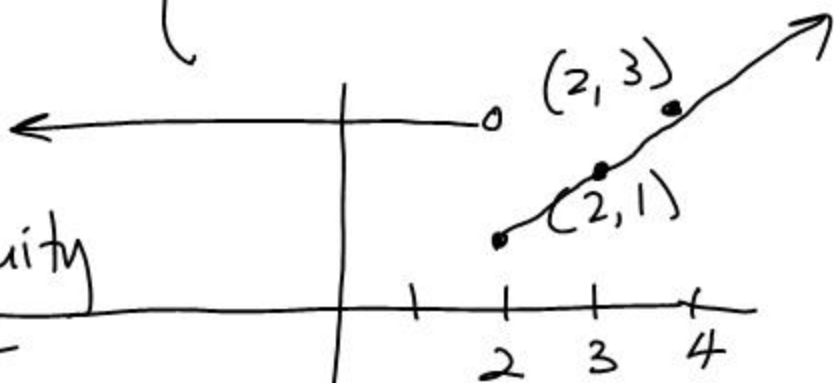


pr. 100

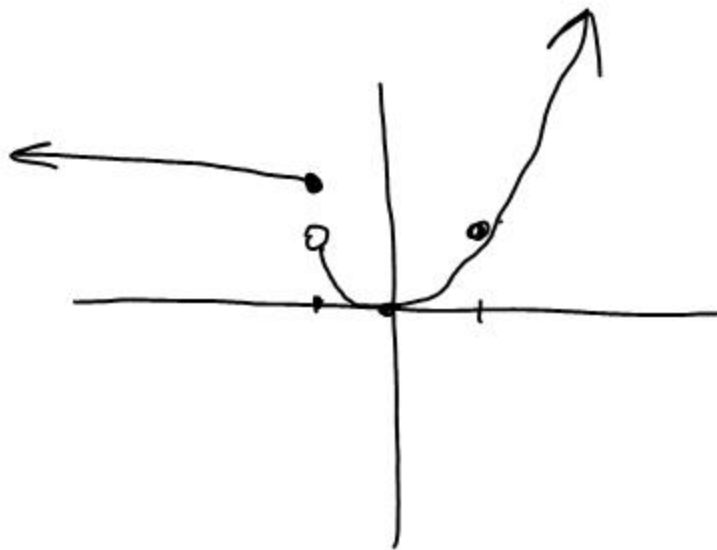
#35. $f(x) = \begin{cases} 3, & x < 2 \\ x-1, & x \geq 2 \end{cases}$

a piecewise function

jump discontinuity at $x=2$



#41. $f(x) = \begin{cases} 2, & x \leq -1 \\ x^2, & x > -1 \end{cases}$



p. 150 #50 $f(x) = \frac{x^4}{x^2 + x - 6}$

Domain: $\mathbb{R} - \{2, -3\}$
 $x^2 + x - 6 = 0$
 $(-\infty, -3) \cup (-3, 2) \cup (2, \infty)$ $(x+3)(x-2) = 0$
 $x = -3, x = 2$

HW p. 150 # 47-61 odd

p. 160 # 4, 34, 36, 40, 42, 44