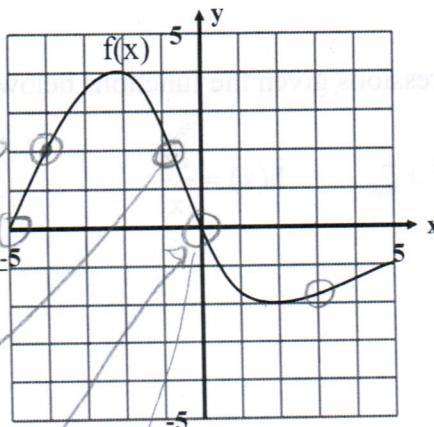


**Key**

WKST #3 part 1

3. Given this graph of the function  $f(x)$ :



Find:

a.  $f(-4) = 2$

b.  $f(0) = 0$

c.  $f(3) \approx -1.75$

d.  $f(-5) = 0$

e.  $x$  when  $f(x) = 2$

$$x = -4 \text{ or } x \approx -0.75$$

y is 2  
so what is x

f.  $x$  when  $f(x) = 0$

$x = 0 \text{ or } x = -5$

4. Find an equation of a linear function given  $h(1) = 6$  and  $h(4) = -3$ .

(1, 6) (4, -3)

$\frac{-3-6}{4-1} = \frac{-9}{3} m = -3$

$y = mx + b$

$6 = -3(1) + b$   
 $+3 \quad +3$   
 $9 = b$

$y = -3x + 9$

$h(x) = -3x + 9$

### APPLICATION

5. Swine flu is attacking Porkopolis. The function below determines how many people have swine where  $t$  = time in days and  $S$  = the number of people in thousands.

$S(t) = 9t - 4$

a. Find  $S(4)$ .  $9(4) - 4$

$36 - 4 = 32$

- b. What does  $S(4)$  mean?

32,000 people have swine after 4 days

- c. Find  $t$  when  $S(t) = 23$ .

$23 = 9t - 4$   
 $27 = 9t$

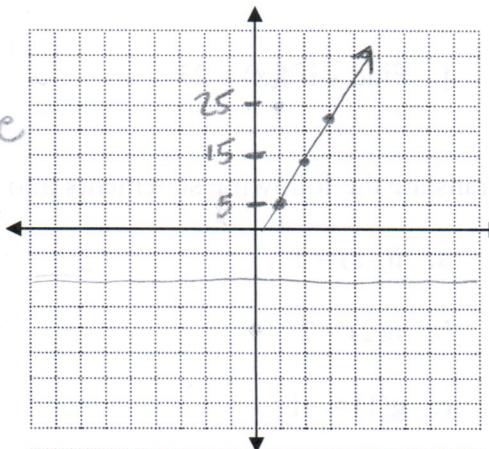
$t = 3 \text{ days}$

- d. What does  $S(t) = 23$  mean?

how many days does it take for 23,000 people to

- e. Graph the function

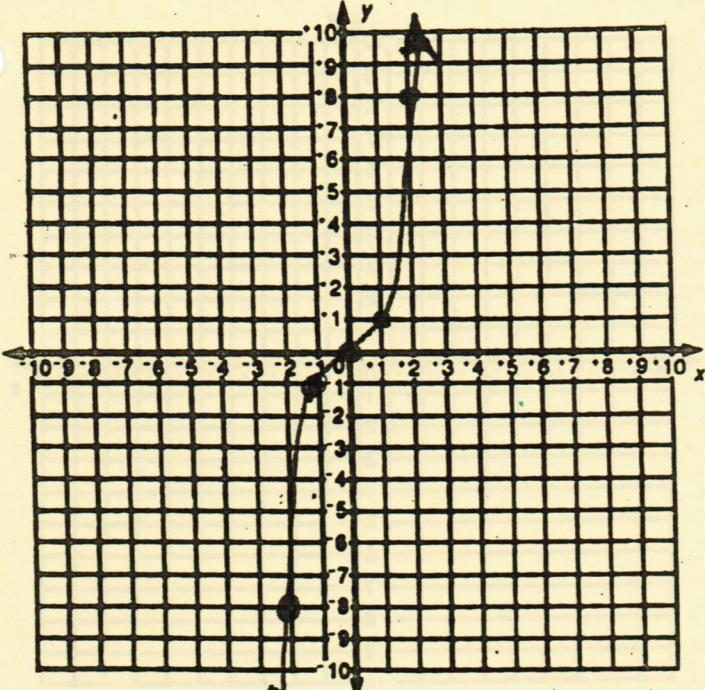
have swine flu  
(3 days)



Here is parent function for

$$y = x^3$$

Key

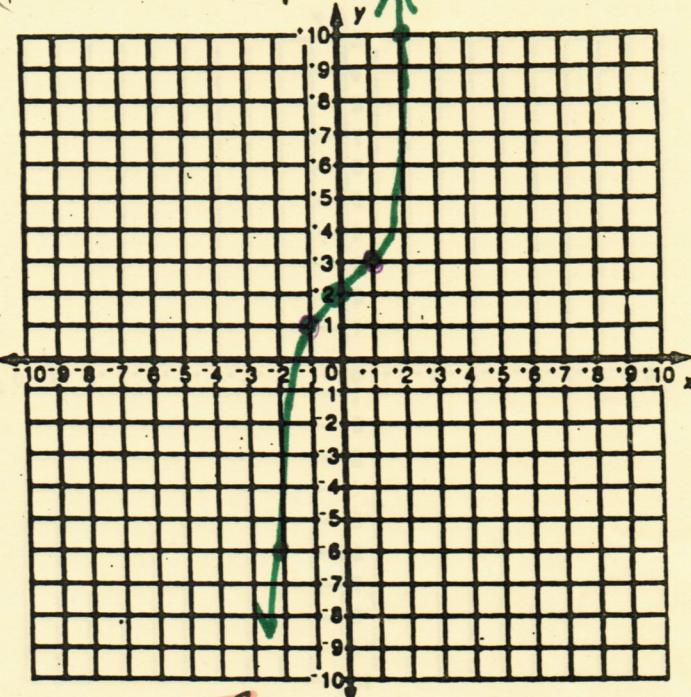


D: x: All real #  
R: y: All real #

Graph:  $y = (x-3)^3$

WS #3 Graph:  
(Part 2)

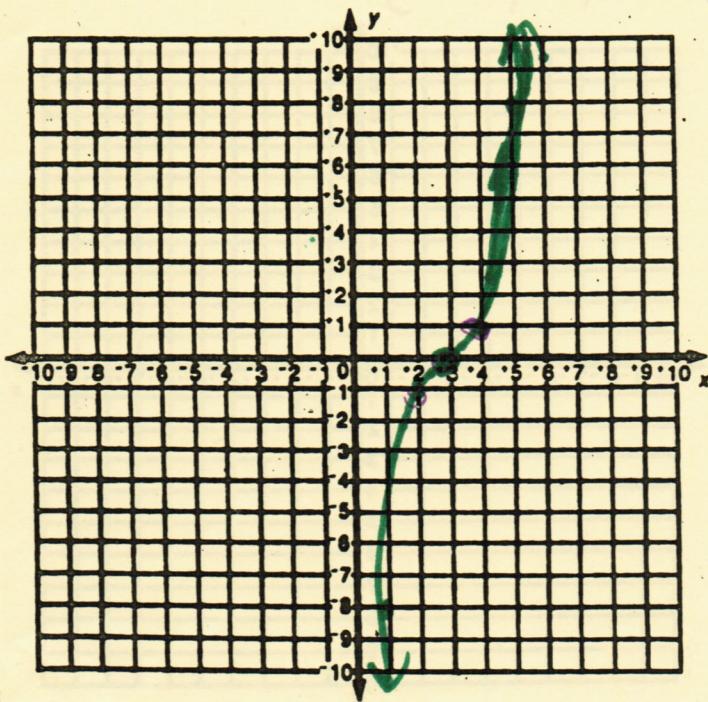
$$y = x^3 + 2$$



Up 2

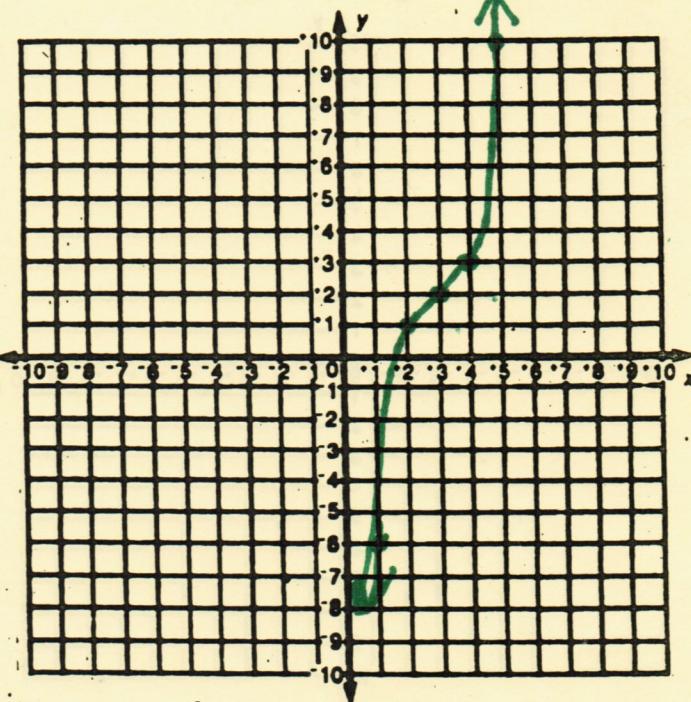
D: x: all real #'s  
R: y: all real #'s

Graph:  $y = (x-3)^3 + 2$



Rt 3 D: x: all real #'s  
R: y: all real #'s

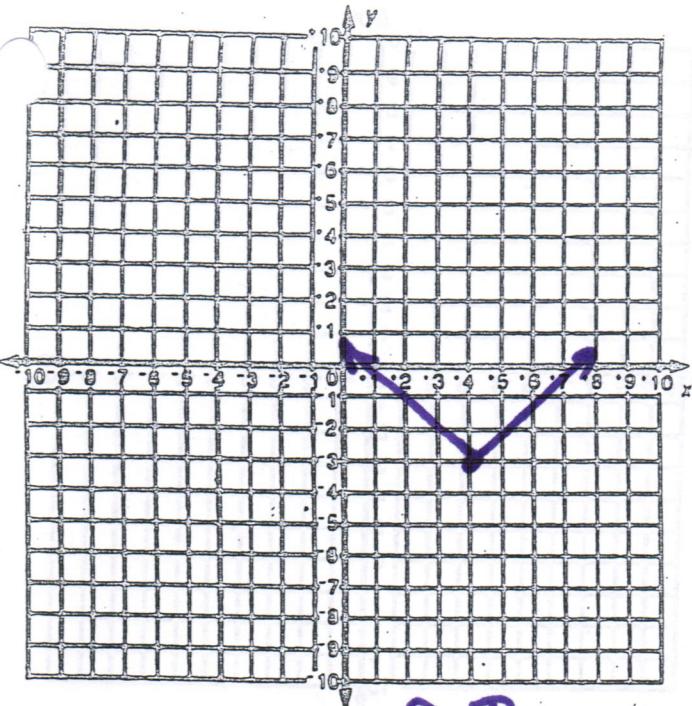
As you can see  $y = x^3$  has same D = R every time



Rt 3 up 2 D: x: all real #'s  
R: y: all real #'s

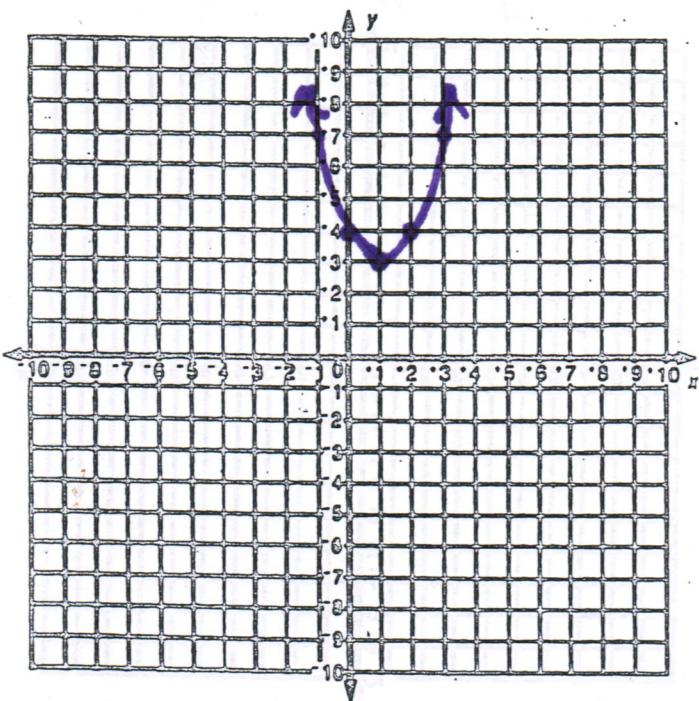
$$y = |x - 4| - 3$$

pg 2



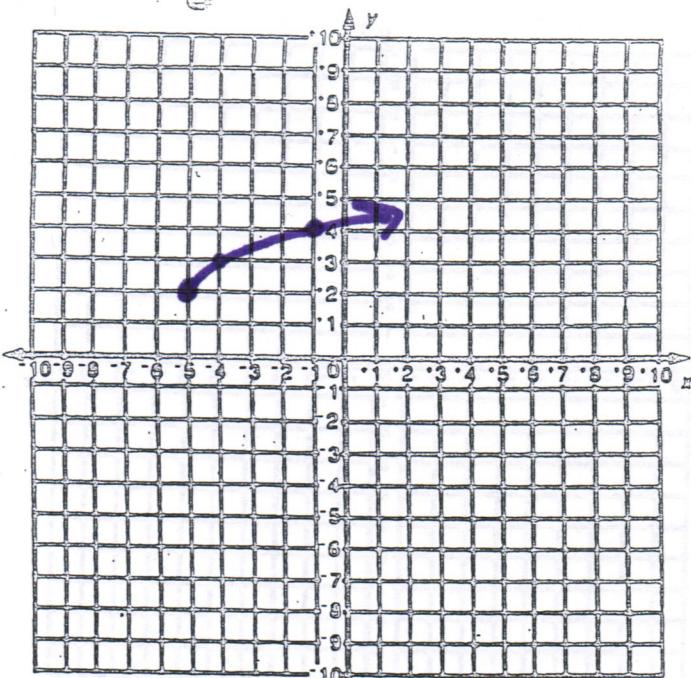
D:  $\mathbb{R}$   
R:  $R \geq -3$

$$y = (x - 1)^2 + 3$$



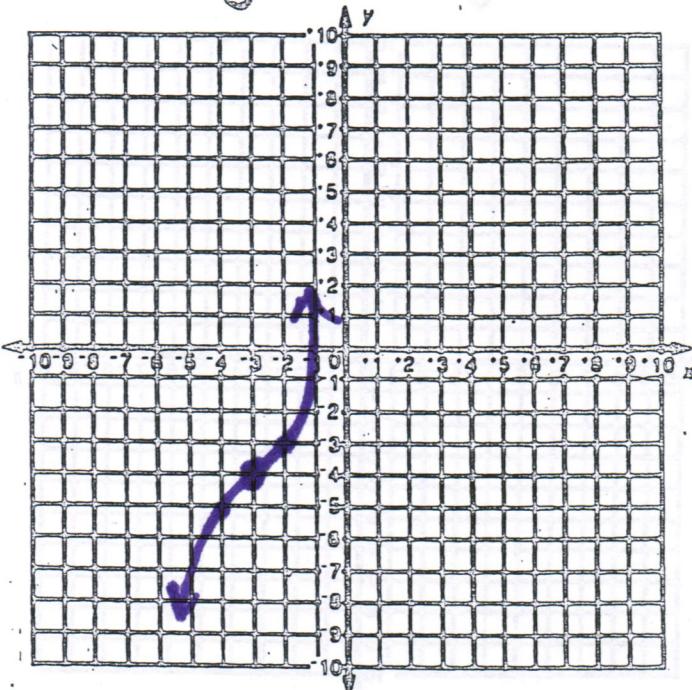
D:  $\mathbb{R}$   
R:  $R \geq 3$

$$y = \sqrt[3]{x} + 5 + 2$$



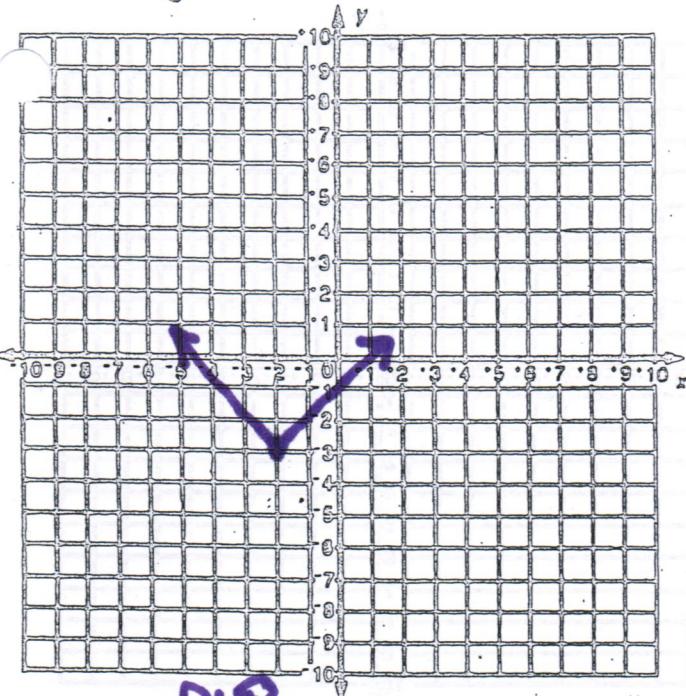
D:  $\mathbb{R} \geq -5$   
R:  $R \geq 2$

$$y = (x + 3)^3 - 4$$



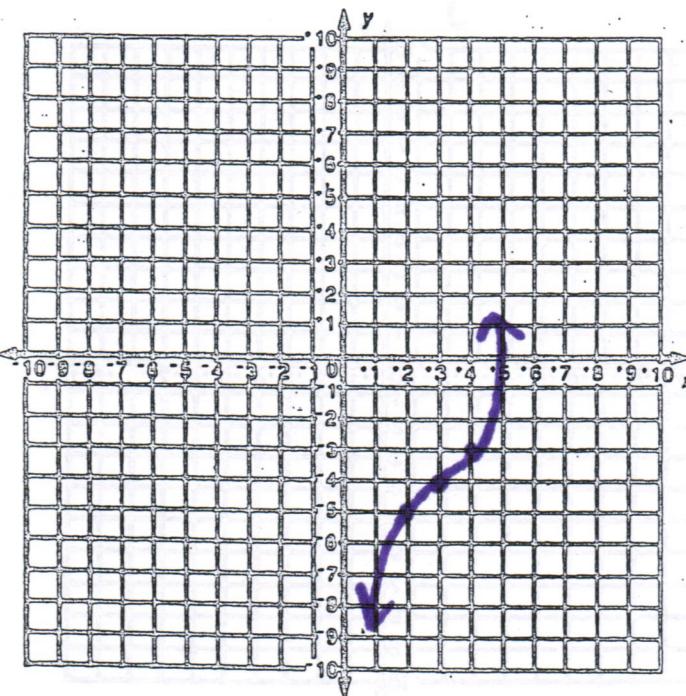
D:  $\mathbb{R}$   
R:  $R$

$$y = |x+2| - 3$$



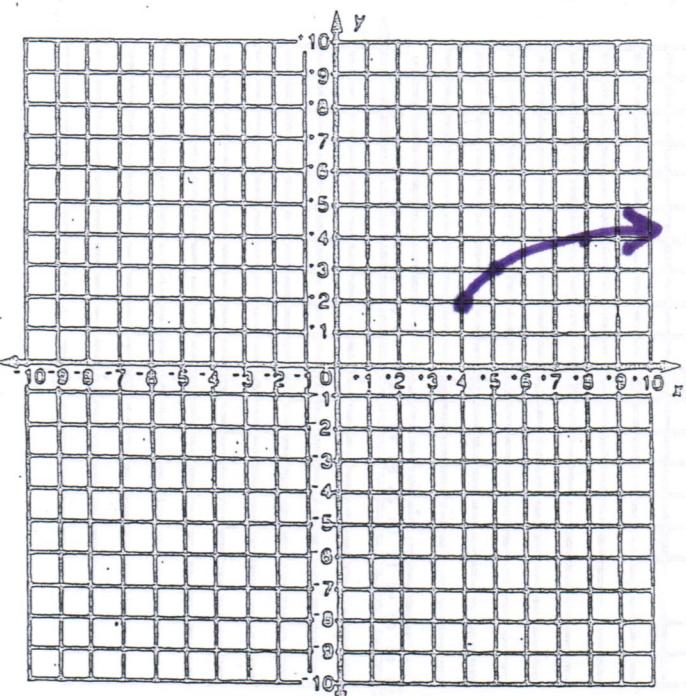
D: R  
R:  $R \geq -3$  ( $R \geq -3$ )

$$y = (x-3)^3 - 4$$



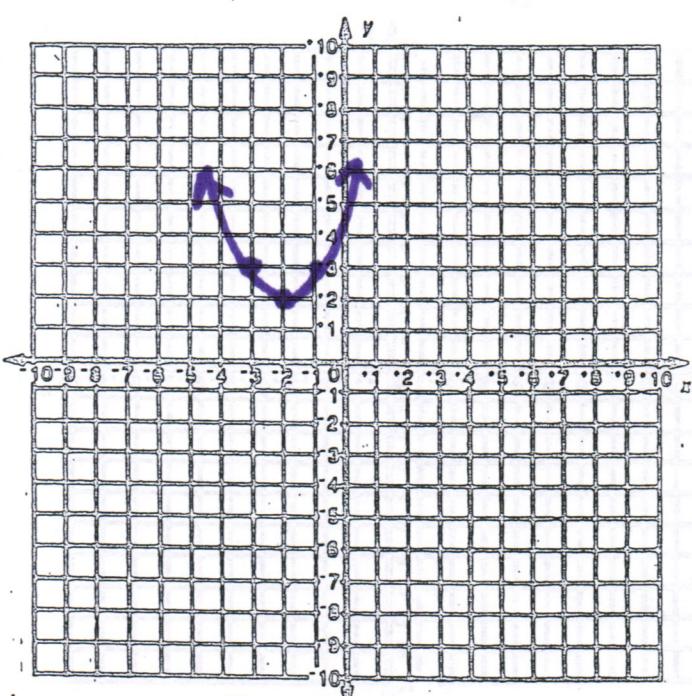
D: R  
R: R

$$y = \sqrt{x-4} + 2$$



D:  $R \geq 4$   
R:  $R \geq 2$

$$y = (x+2)^2 + 2$$



D: R  
R:  $R \geq 2$