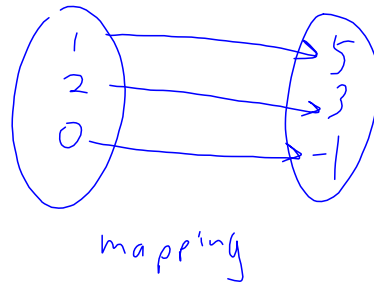
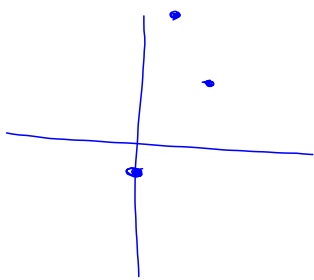


9.1 Relation - set of ordered pairs  
 p. 612  $\{(1, 5), (2, 3), (0, -1)\}$



table

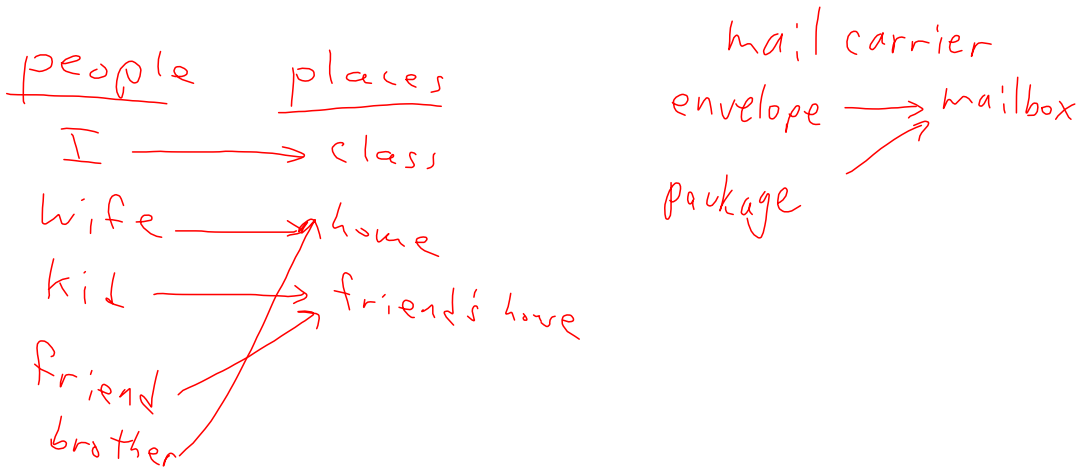
| x | y  |
|---|----|
| 1 | 5  |
| 2 | 3  |
| 0 | -1 |

---

equation  $y = 2x + 4$

Feb 22-6:29 PM

Function - Relation in which  
 each  $x$  is paired with  
exactly one  $y$ .



Feb 22-6:40 PM

Domain - set of  $x$  values  
input values  
independent variable

Range - set of  $y$  values  
output values  
dependent variables

Feb 22-6:43 PM

ex 18  $\{(8, 0), (5, 4), (9, 3), (3, 8)\}$   
is a function.

$$\text{Domain} = \{8, 5, 9, 3\}$$

$$\text{Range} = \{0, 4, 3, 8\}$$

Feb 22-6:47 PM

ex 20  $\{(9, -2), (-3, 5), (9, 2)\}$

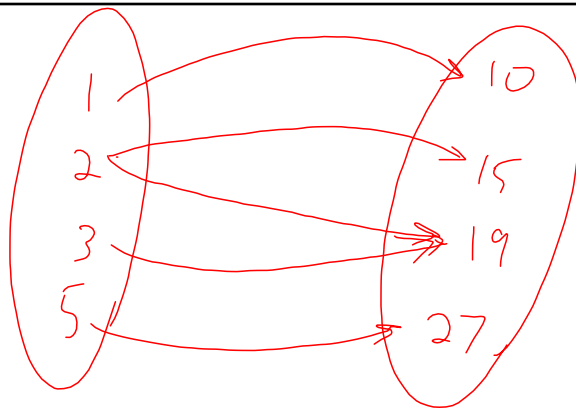
not a function

Domain:  $\{9, -3\}$

Range:  $\{-2, 5, 2\}$

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ex 26



not  
a function

Domain:  $\{1, 2, 3, 5\}$

Range:  $\{10, 15, 19, 27\}$

Feb 22-6:52 PM

ex 28

| x  | y  |
|----|----|
| -4 | -4 |
| -4 | 0  |
| -4 | 4  |
| -4 | 8  |

not a function

$$D = \{-4\}$$

$$R = \{-4, 0, 4, 8\}$$

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ex 30

| x  | y  |
|----|----|
| -3 | -6 |
| -1 | -6 |
| 1  | -6 |
| 3  | -6 |

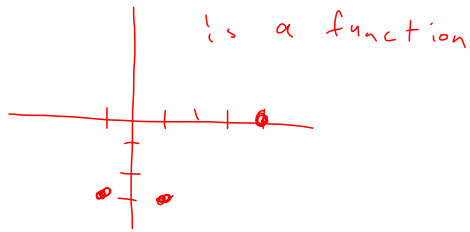
is a function

$$D = \{-3, -1, 1, 3\}$$

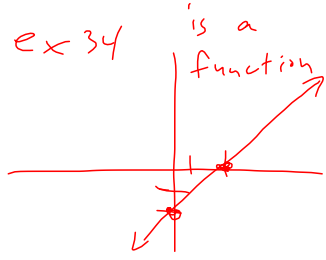
$$R = \{-6\}$$

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ex 32



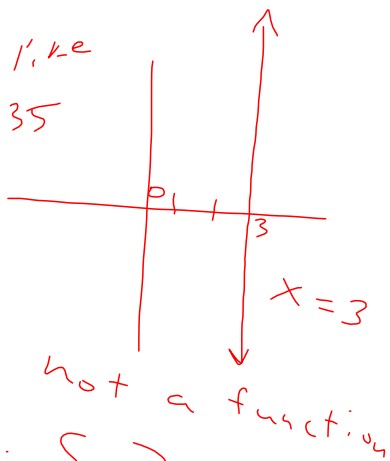
$D: \{-1, 1, 4\}$   
 $R: \{-3, 0\}$



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

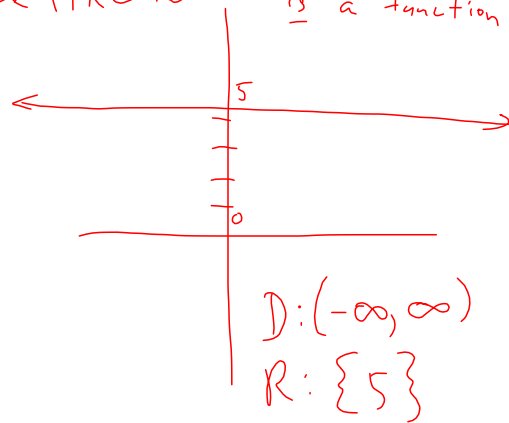
Feb 22-6:58 PM

ex like  
 #35



$D: \{3\}$   
 $R: (-\infty, \infty)$

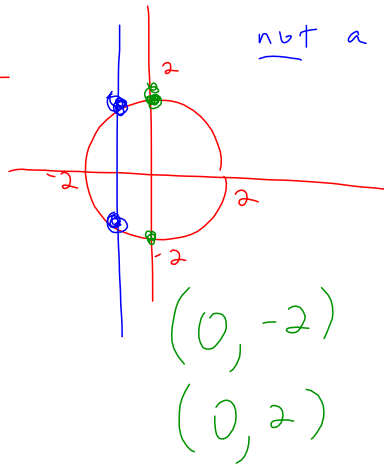
ex like 36 'is a function



$D: (-\infty, \infty)$   
 $R: \{5\}$

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ex 38



not a function

$$D: [-2, 2]$$

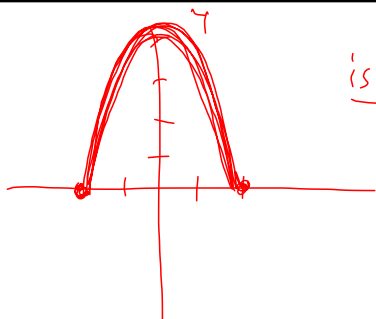
$$R: [-2, 2]$$

$$(0, -2)$$

$$(0, 2)$$

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ex 40

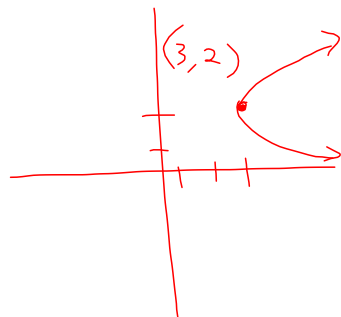


is a function

$$D: [-2, 2]$$

$$R: [0, 4]$$

ex 42

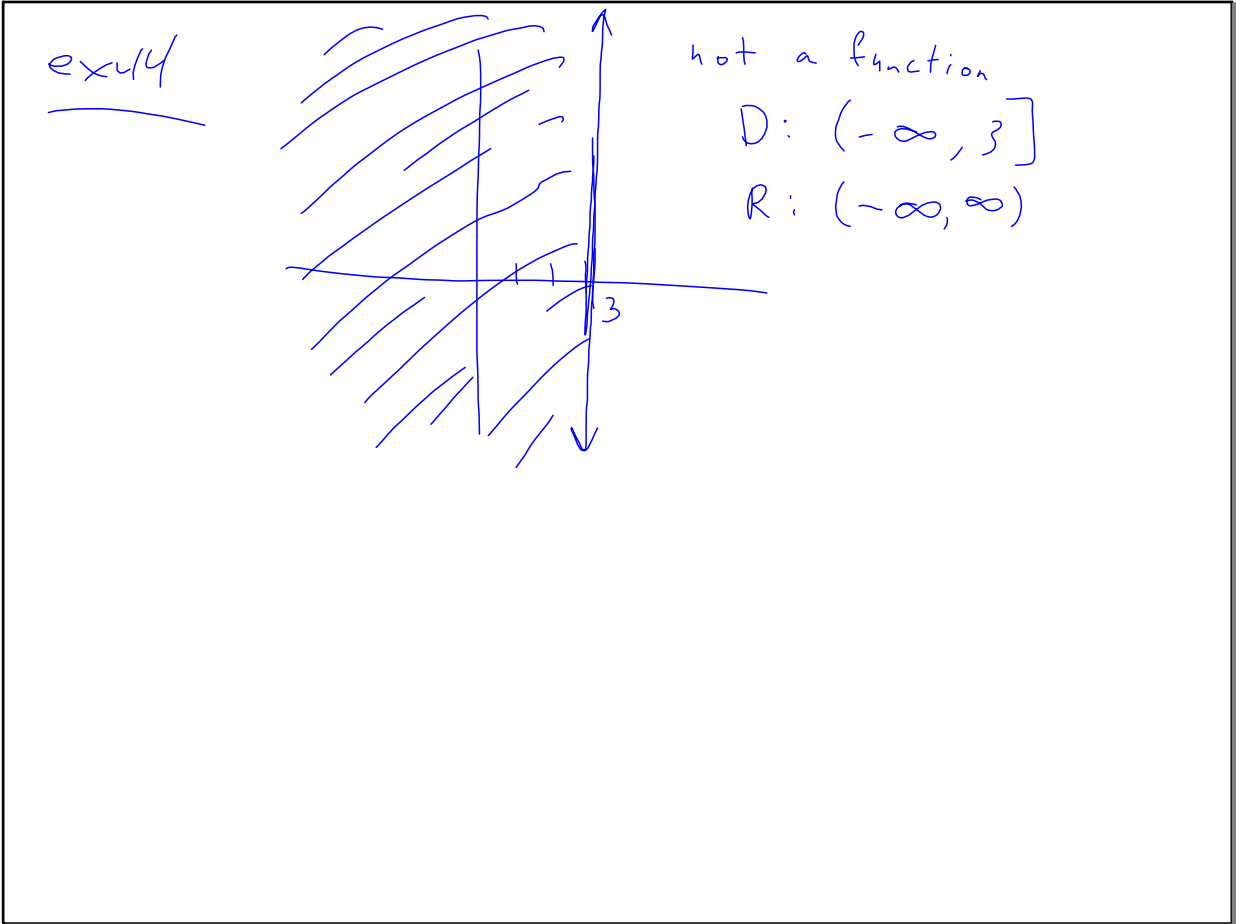


not a function

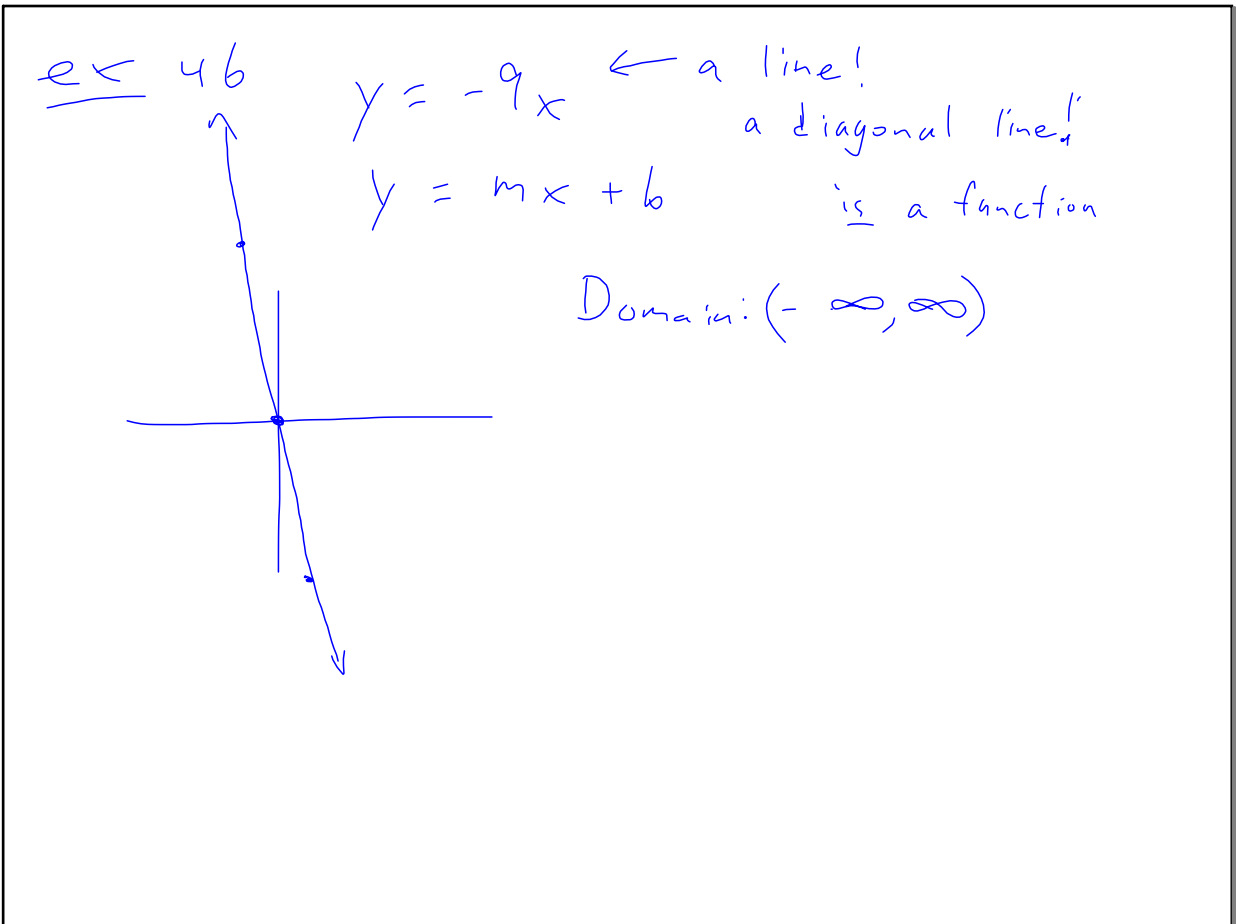
$$D: [3, \infty)$$

$$R: (-\infty, \infty)$$

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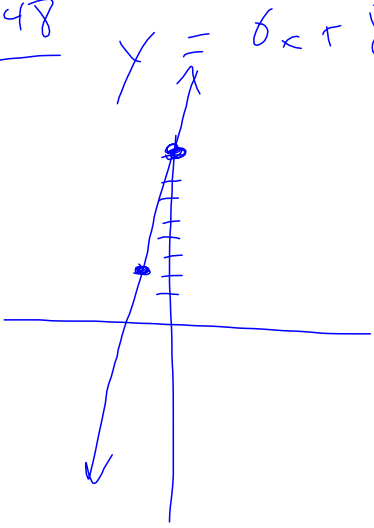


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Feb 22-7:20 PM

ex 48  $y = 6x + 8$



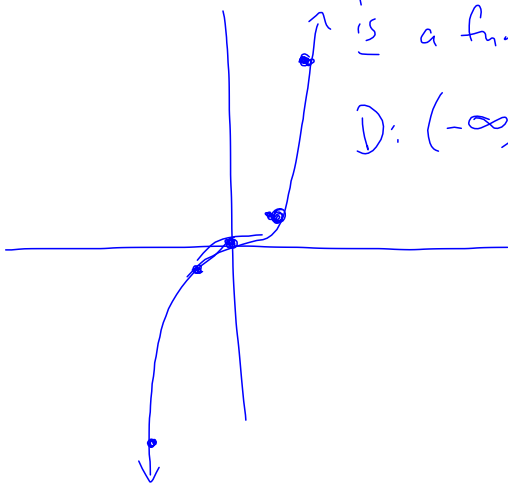
is a diagonal line  
& therefore is a function.

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

Feb 22-7:26 PM

ex 50  $y = x^3$

| x  | y   |
|----|-----|
| -3 | -27 |
| -2 | -8  |
| -1 | -1  |
| 0  | 0   |
| 1  | 1   |
| 2  | 8   |



is a function  
D:  $(-\infty, \infty)$

Feb 22-7:30 PM



ex 52

$$x = y^4$$

| x  | y  |
|----|----|
| 1  | -1 |
| 0  | 0  |
| 1  | 1  |
| 16 | 2  |

$$D: [0, \infty)$$

not  
a  
function

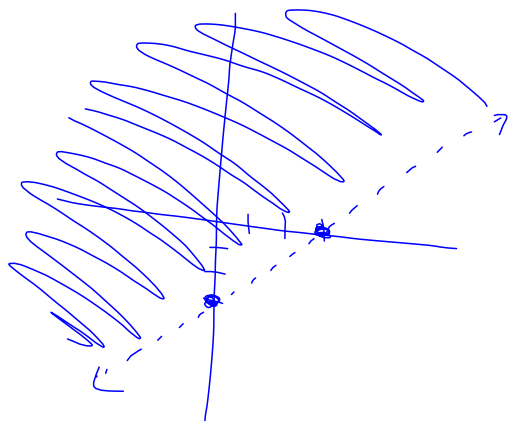
Feb 22-7:34 PM

ex 54

$$x - y < 3$$

not a function

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



Feb 22-7:40 PM

ex 58

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

diagonal line  
is a function

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

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

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

$$y = mx + b$$

Feb 22-7:44 PM

ex 60

$$y = \frac{-6}{x}$$

is a function

$$-6 \div \frac{1}{2}$$

$$-6 \cdot 2 = -12$$

| x             | y   |
|---------------|-----|
| $\frac{1}{2}$ | -12 |
| -1            | -6  |
| 2             | -3  |
| -1            | 6   |
| -2            | 3   |

$$D: (-\infty, 0) \cup (0, \infty)$$

$$\frac{-6}{0} = a$$

$$-6 = 0 \cdot a$$

Feb 22-7:47 PM