

2. 25 p 25

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

y =

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

x ↔ y

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

Solve for y

$$2(x+3) = 2\left(\frac{1}{2}y\right)$$

$$2x + 6 = y$$

Write as a function

$$f^{-1}(x) = 2x + 6$$

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

$$(f \circ f^{-1})(x) = \frac{1}{2}(2x + 6) - 3$$

$$(f \circ f^{-1})(x) = x + 3 - 3$$

$$(f \circ f^{-1})(x) = x$$

$$(f^{-1} \circ f)(x) = 2\left(\frac{1}{2}x - 3\right) + 6$$

$$= x - 6 + 6$$

$$(f^{-1} \circ f)(x) = x$$

$$17. \quad 2.5 \text{ p22} \quad d = rt$$

$$d(h) = 60h \quad d = 60t$$

$$2.2$$

$$19. \quad 2^5$$

$$20. \quad 2^0 = 1$$

$$21. \quad 4^5 = (2^2)^5 = 2^{10}$$

$$22. \quad \frac{1}{2} = 2^{-1}$$

$$23. \quad \frac{1}{8} = 2^{-3}$$

$$16. \quad 27^{\frac{2}{3}}$$

$$\sqrt[3]{27^2} \quad \text{or} \quad (\sqrt[3]{27})^2$$

$$3^2$$

$$9$$

$$17. \quad 49^{\frac{1}{2}}$$

$$\sqrt{49}$$

$$7$$

$$18. \quad 9^{-\frac{2}{3}}$$

$$\frac{1}{(\sqrt[3]{9})^2}$$

$$\frac{1}{3^2}$$

$$\frac{1}{27}$$

p29 2.1

3.  $f(x) = (x+2)^2 + 3$

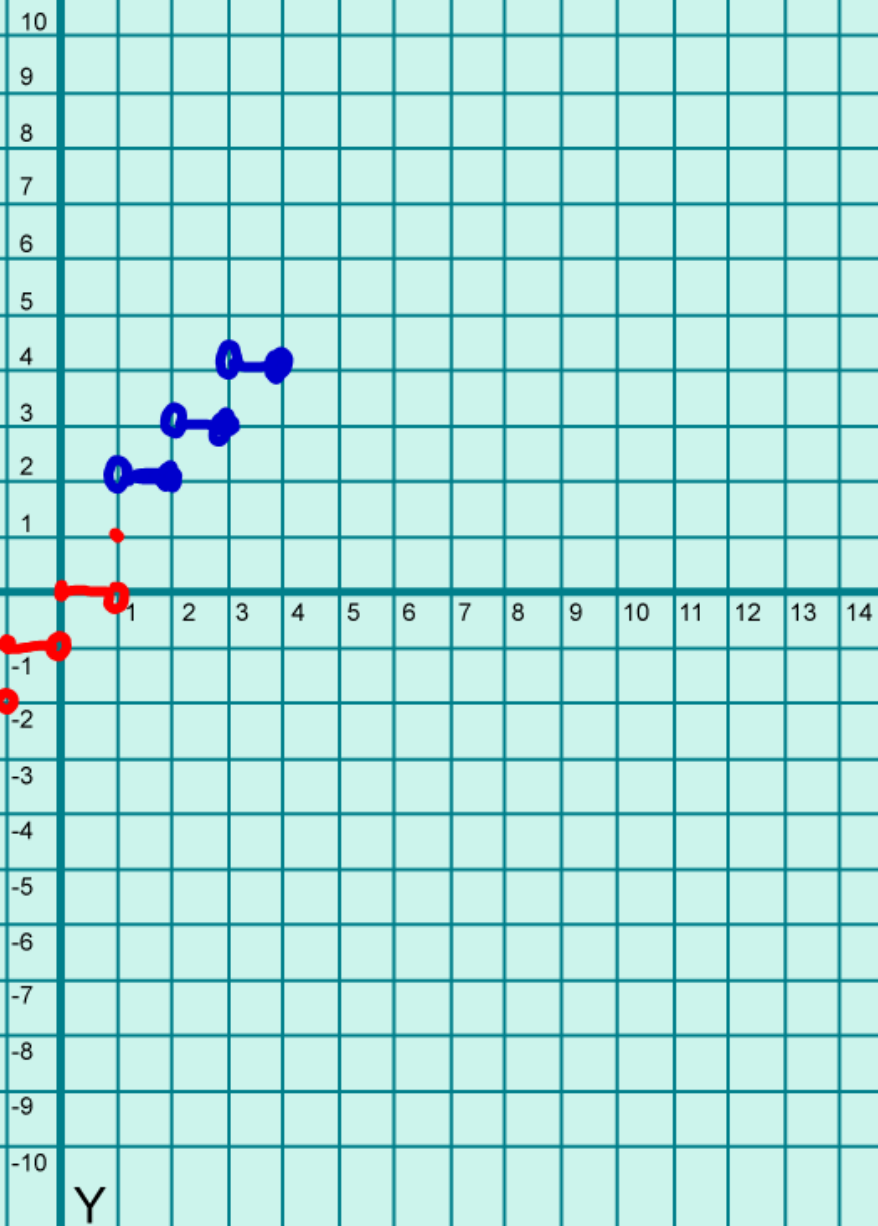
Horiz. trans. 2 left

Vert. trans 3 up

4.  $2\sqrt{-9}$        $x=9$

$$f(x) = \begin{cases} [x] & -2 \leq x \leq 1 \\ \lceil x \rceil & 1 < x \leq 4 \end{cases}$$

x	y	x	y
-2	-2	1.2	2
-1.9	-2	1.9	2
-1.2	-2	2	2
-1	-1	2.2	3
-0.9	-1	2.9	3
-0.2	-1	3	3
0	0	3.2	4
.2	0	3.9	4
.9	0	4	4
1	1		



$$f(x) = |x| + 3$$

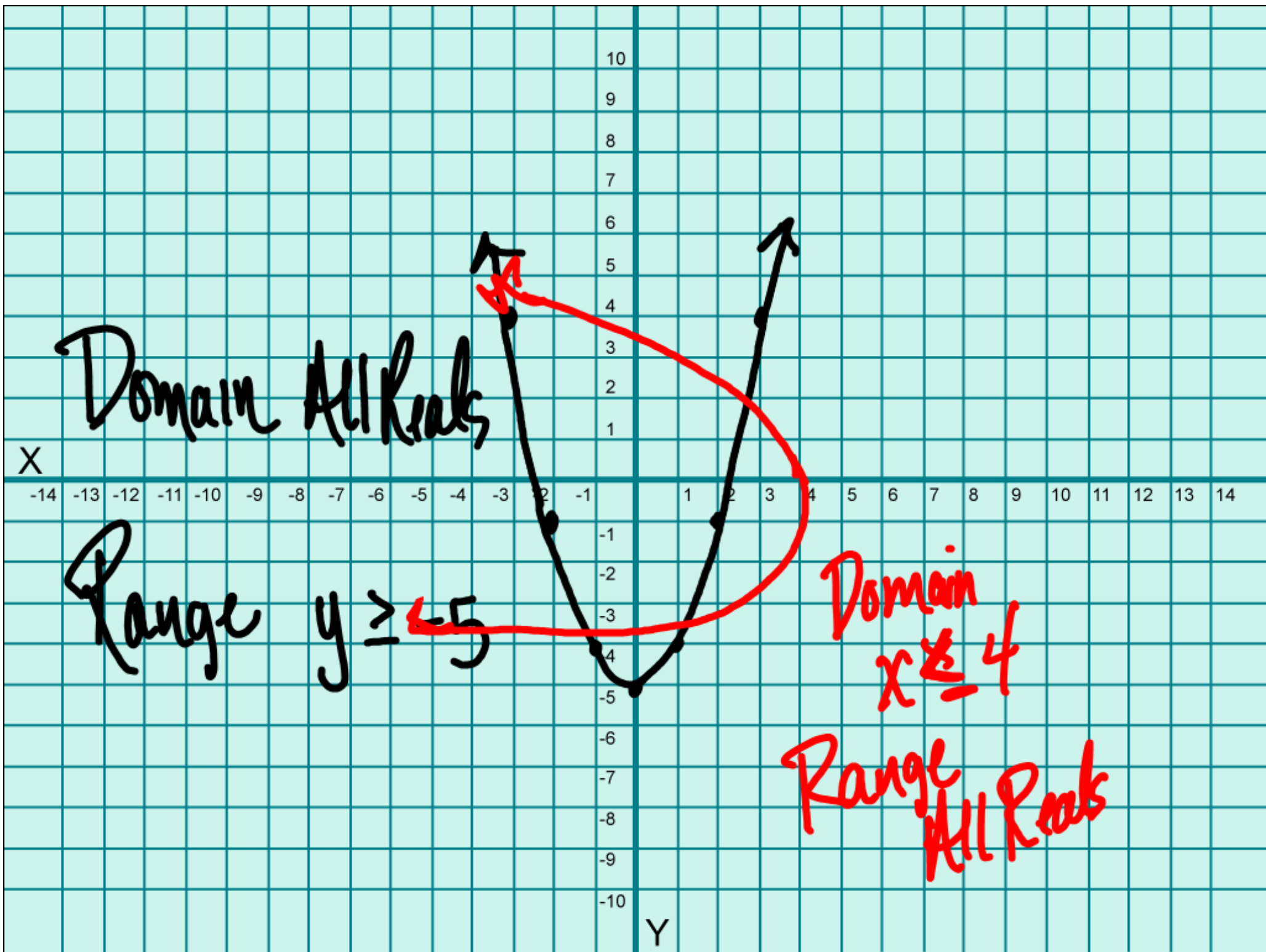
$$y = |x| + 3$$

x	y
0	3
1	4
-1	4
2	5
-2	5

Domain  $x$  All Reals

Range  $y$   $y \geq 3$





Domain All Reals

Range  $y \geq -5$

Domain  $x \leq 4$

Range All Reals

$$f(x) = |x| + 7$$

Domain All Reals

X

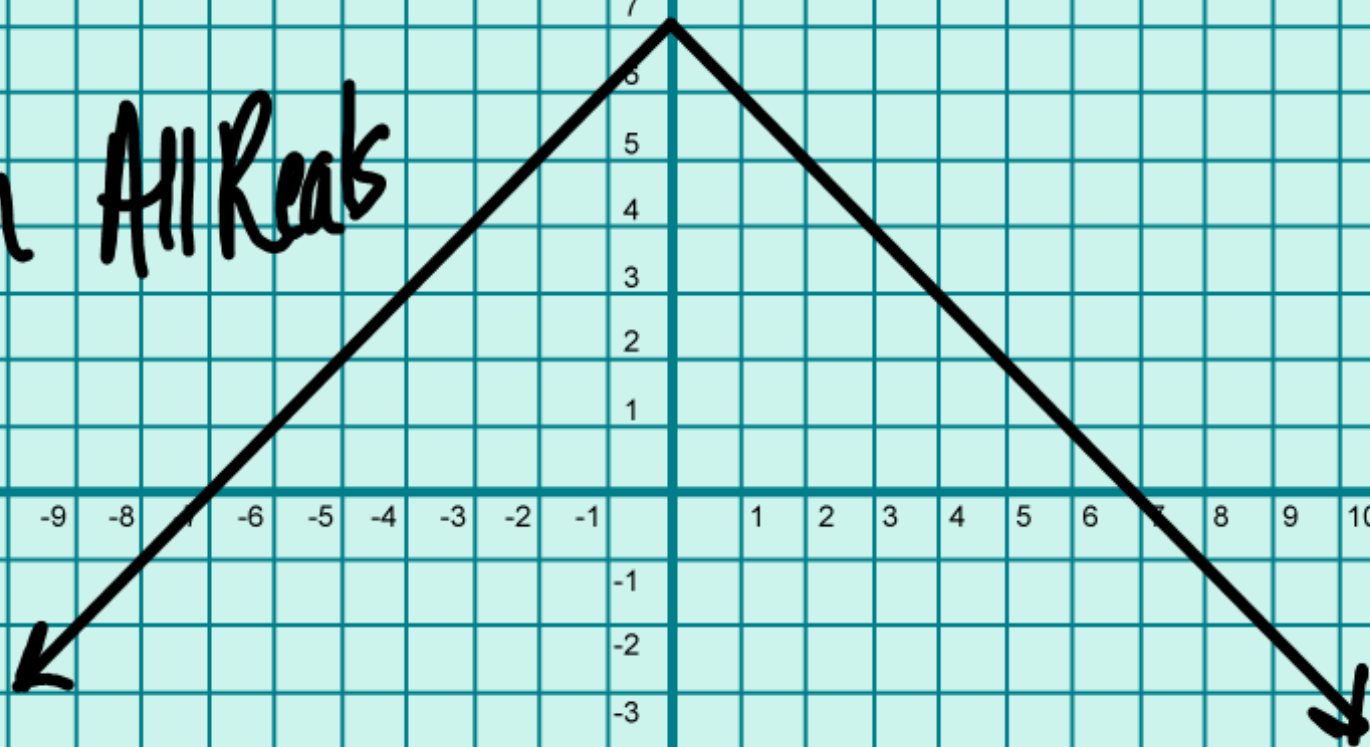
-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 1 2 3 4 5 6 7 8 9 10 11 12 13 14

10  
9  
8  
7  
6  
5  
4  
3  
2  
1

-1  
-2  
-3  
-4  
-5  
-6  
-7  
-8  
-9  
-10

Y

Range  $y \leq 7$



p20 2.2

$$38. \left(\frac{3x}{y^3}\right)^3 \left(\frac{5x^{-10}yz^2}{2x^{-1}y^3}\right)^{-2}$$

$$(3xy^3)^3 \left(\frac{5x^{-9}y^{-2}z^2}{2}\right)^{-2}$$

$$(27x^3y^9) \left(\frac{5^{-2}x^{18}y^4z^{-4}}{2^{-2}}\right)$$

$$(27x^3y^9) \left(\frac{2^2x^{18}y^4}{5^2z^4}\right)$$

$$\left(\frac{27x^3y^9}{1}\right) \left(\frac{4x^{18}y^4}{25z^4}\right)$$

$$\frac{27}{4}$$

$$\frac{108x^{21}y^{13}}{25z^4}$$

$$39. (x^{-5}y^{-1})^{-2} (x^2y^{-4})^3$$

$$(x^{10}y^2) (x^6y^{-12})$$

$$\frac{x^{16}y^{-10}}{\frac{x^6}{y^{10}}}$$

$$\frac{6x^0}{6(1)} \frac{x^6}{y^{10}} \frac{(6x)^0}{1}$$