

Chapter 5

Coordinate Geometry

"Where algebra and geometry meet"

5.1 Relations as Ordered Pairs

Pg 243

2. $(2, 6)$, $(3, 9)$, $(5, 15)$, $(8, 24)$

a) Domain is the set of all x -values

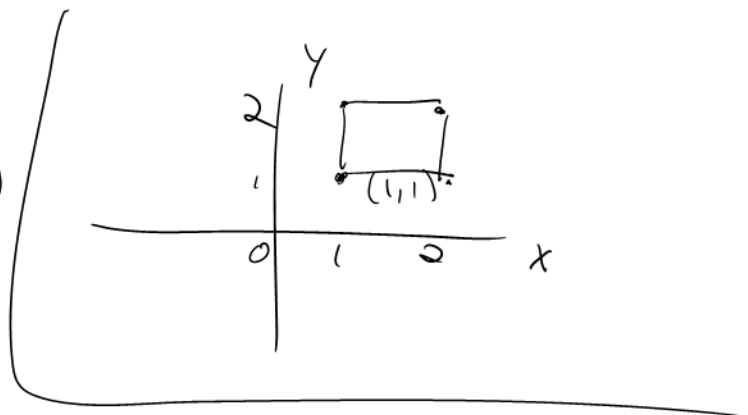
→ Domain: 2, 3, 5, 8

Range is the set of all y -values

→ Range: 6, 9, 15, 24

b) x is multiplied by three

$$\Rightarrow y = 3x$$



4. $(4, 9)$, $(5, 9)$, $(7, 9)$, $(21, 9)$

a) Domain: 4, 5, 7, 21

Range: 9

b) The answer is always nine. There is no relationship between x and y

$$\Rightarrow y = 9$$

6. $x + y = 4$

x	y	(x, y)
2	2	(2, 2)
1	3	(1, 3)
0	4	(0, 4)
-1	5	(-1, 5)
-2	6	(-2, 6)

Range $\uparrow$

9. $s - t = 3$

s	t	(s, t)
4	1	(4, 1)
3	0	(3, 0)
2	-1	(2, -1)
1	-2	(1, -2)
0	-3	(0, -3)

Range $\uparrow$

10. $y = \frac{1}{2}x + 2$

x	y	(x, y)
2	$\frac{1}{2}(2) + 2 = 10$	(2, 10)
1	$\frac{1}{2}(1) + 2 = 6$	(1, 6)
0	$\frac{1}{2}(0) + 2 = 2$	(0, 2)
-1	$\frac{1}{2}(-1) + 2 = -2$	(-1, -2)
-2	$\frac{1}{2}(-2) + 2 = -6$	(-2, -6)

Range $\uparrow$

13. $y = -x - 2$

x	y	(x, y)
-4	$-(-4) - 2 = 2$	(-4, 2)
-3	$-(-3) - 2 = 1$	(-3, 1)
-2	$-(-2) - 2 = 0$	(-2, 0)
-1	$-(-1) - 2 = -1$	(-1, -1)
0	$-(0) - 2 = -2$	(0, -2)

Range $\uparrow$

14. $x + y = 8$

a) (1, 7)

c) (-5, 13)

e) (10, -2)

16. Find 5 ordered pairs

$x + y = 11$

x	y	(x, y)
-2	13	(-2, 13)
-1	12	(-1, 12)
0	11	(0, 11)
1	10	(1, 10)
2	9	(2, 9)

19. $y = 2x - 7$

x	y	(x, y)
-2	$2(-2) - 7 = -11$	(-2, -11)
-1	$2(-1) - 7 = -9$	(-1, -9)
0	$2(0) - 7 = -7$	(0, -7)
1	$2(1) - 7 = -5$	(1, -5)
2	$2(2) - 7 = -3$	(2, -3)

20.

x	y
1	8
2	7
3	6
4	5

$$x + y = 9$$

25.

Time (h)	Distance (km)	(t, d)
1	80	(1, 80)
2	160	(2, 160)
3	240	(3, 240)
4	320	(4, 320)
5	400	(5, 400)
6	480	(6, 480)

f) $D = 80t$

g) 12 hours:

$$D = 80(12)$$

$$D = 960 \text{ km}$$

21 hours

$$D = 80(21)$$

$$D = 1680 \text{ km}$$

Homework: pg 243 all listed in outline.