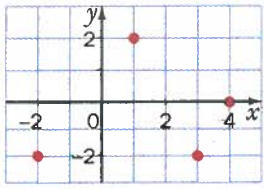
Because a relation is a set of ordered pairs, graphing the ordered pairs is one way to represent the relation.

Example 3 Reading a Graph

For the graph shown,

a) express the relation as a set of ordered pairs

b) write the domain and range



Solution

a) The set of ordered pairs is (–2, –2), (1, 2), (3, –2), (4, 0).

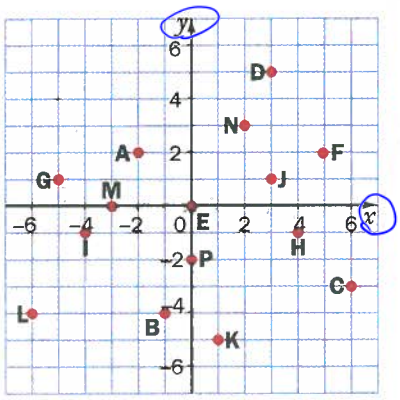
b) The domain is {–2, 1, 3, 4}. The range is {–2, 0, 2}.

Practice

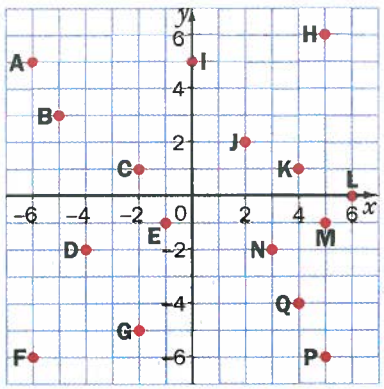
A

Name the point with the given coordinates on the following grid.

1. (3, 1) J
2. (–5, 1) G
3. (2, 3) N
4. (4, –1) H
5. (0, –2) P
6. (5, 2) F
7. (–3, 0) M
8. (1, –5) K
9. (–6, –4) L
10. (–2, 2) A
11. (3, 5) D
12. (6, –3) C
13. (–1, –4) B
14. (0, 0) E
15. (–4, –1) I



16. Write the coordinates of each point shown on the grid.



Plot each point on a grid.

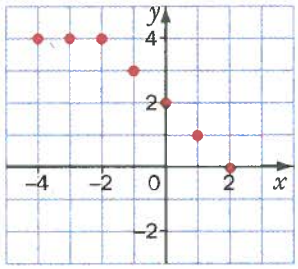
17. A(3, 5)
18. B(5, 3)
19. C(–3, 5)
20. D(–5, 3)
21. E(3, –5)
22. F(5, –3)
23. G(0, 4)
24. H(4, 0)
25. I(–4, 0)
26. J(0, –4)
27. K(1, 1)
28. L(–1, 1)
29. M(1, –1)
30. N(–1, –1)
31. O(0, 0)

For each graph,

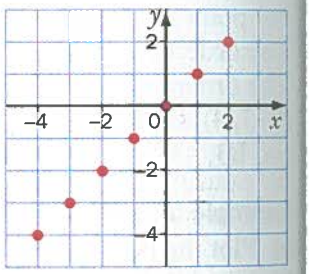
a) *express the relation as a set of ordered pairs*

b) *write the domain and range*

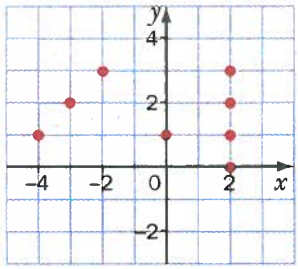
32.



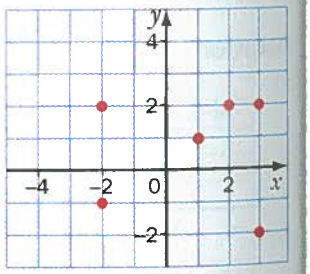
33.

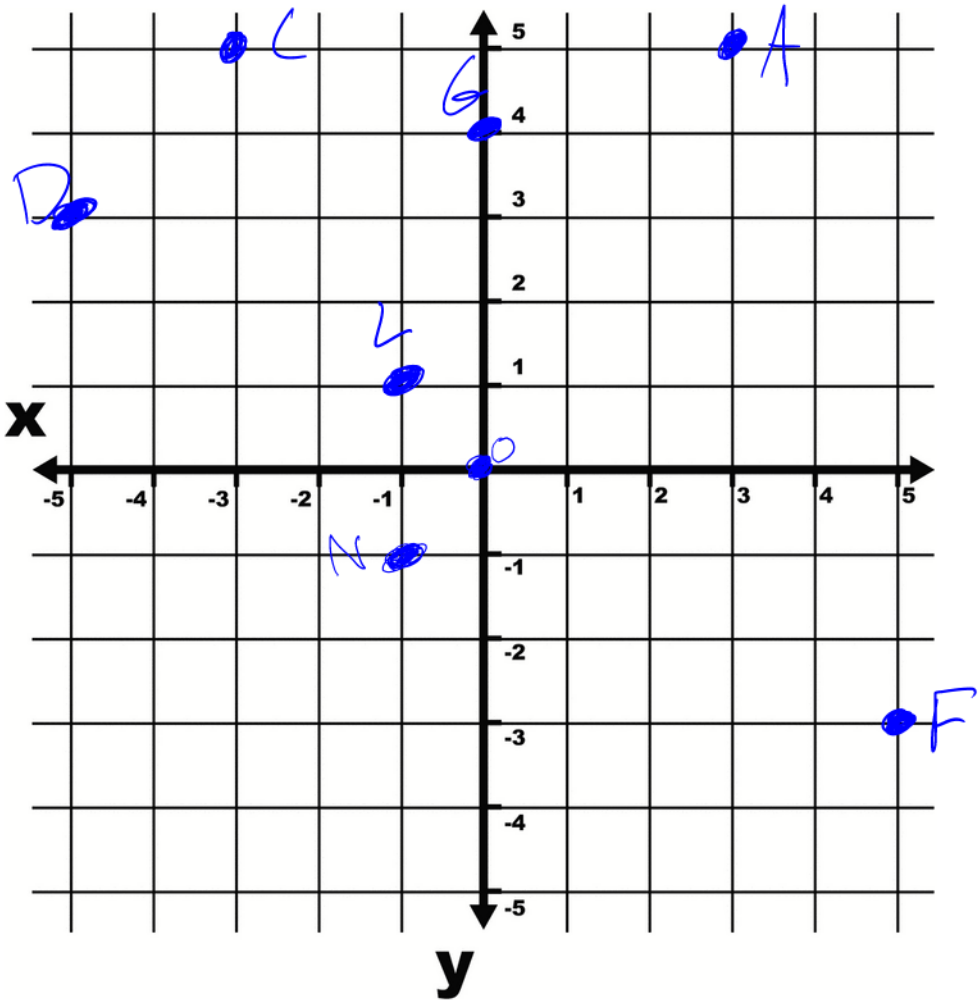


34.

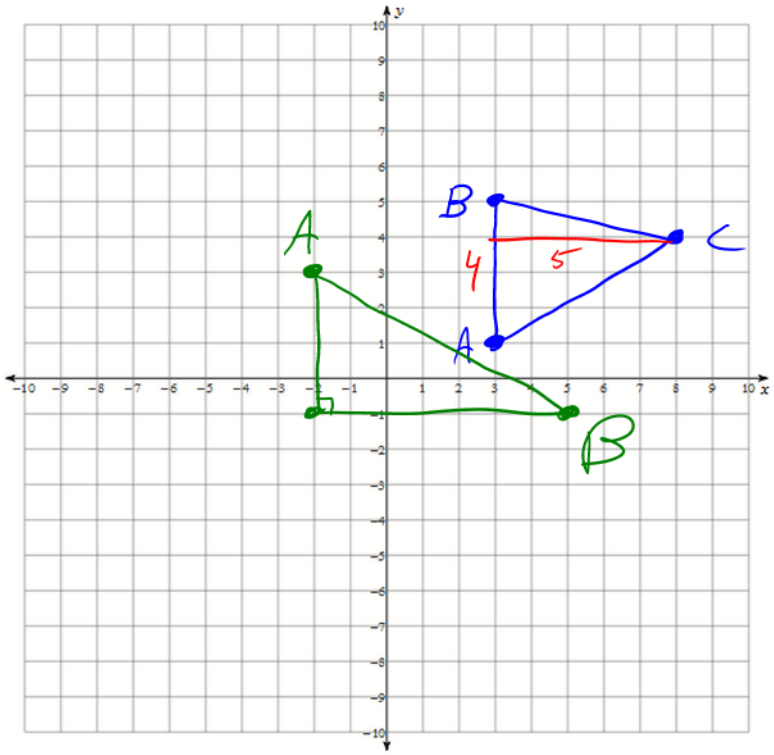


35.





(5, -3)



40. A(3,1)
B(3,5)
C(8,4)

$A = \frac{bh}{2}$

$A = \frac{(4)(5)}{2}$

$A = 10 \text{ units}^2$

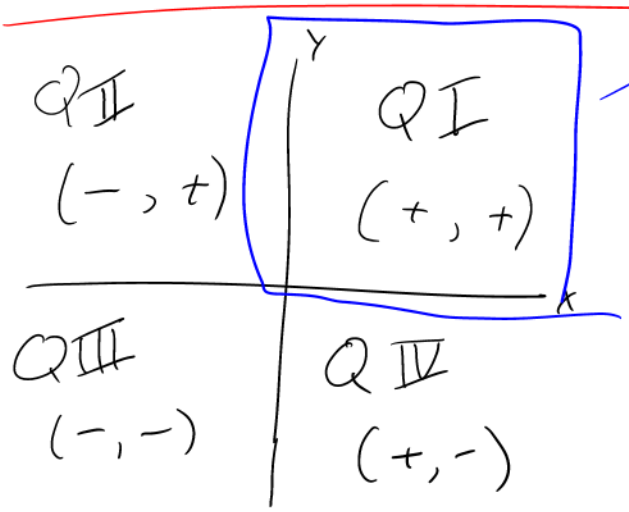
41. A(-2,3)

B(5,-1)

C(-2,-1)

C(5,3)

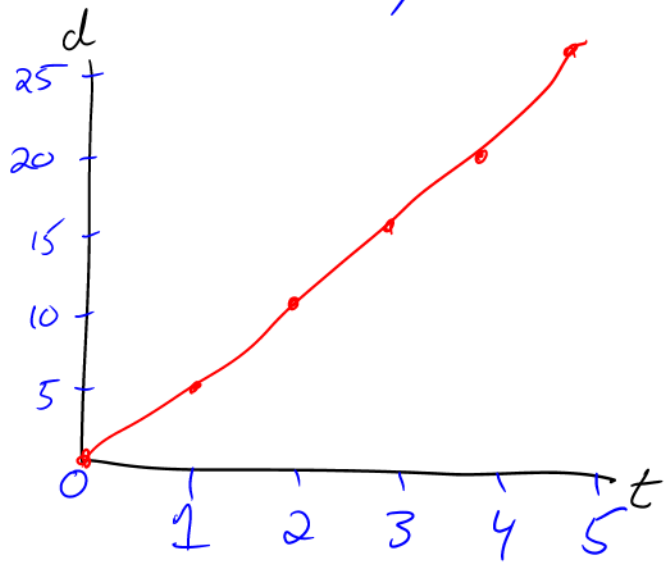
5.3 Graphing Linear Relations: First Quadrant Graphs



1. (0, 0)
(1, 1)
(2, 2)
(3, 3)
(4, 4)
(5, 5)

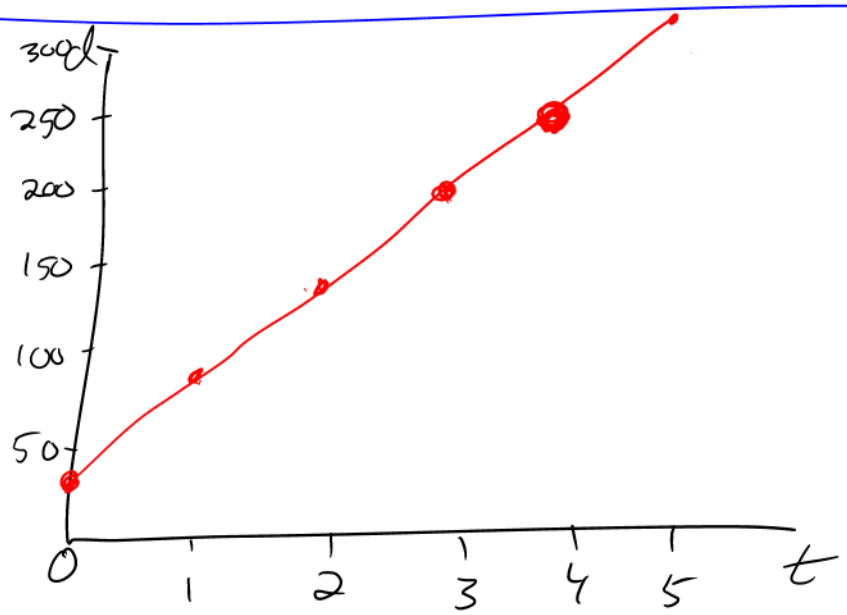
3.

Time	Distance
0	0
1	5
2	10
3	15
4	20
5	25



6.

Time	Distance
0	30
1	80
2	130
3	180
4	230
5	280



5.4 Graphing Linear Equations

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1. $y = x - 1$

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

4. $y = 2x + 2$

x	y	(x, y)
-2	$2(-2) + 2 = -2$	$(-2, -2)$
-1	$2(-1) + 2 = 0$	$(-1, 0)$
0	$2(0) + 2 = 2$	$(0, 2)$
1	$2(1) + 2 = 4$	$(1, 4)$
2	$2(2) + 2 = 6$	$(2, 6)$

5.2 All

5.3 All

5.4 # 2, 3