

Mock Test

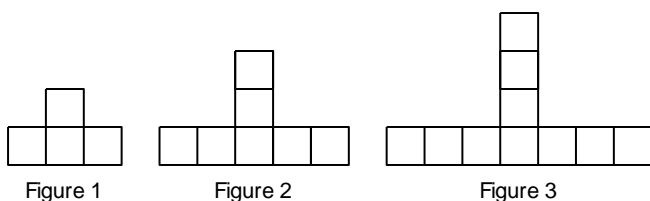
Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ___ 1. In a table of values for a pattern, $P = 12$ when $n = 3$. Determine the equation that might represent the pattern.
 a. $P = 4n + 6$ b. $P = 24 - 3n$ c. $P = 4(6 - n)$ d. $P = 4(n + 6)$
- ___ 2. The pattern in this table continues. Determine the expression that relates the number of triangles to the figure number.

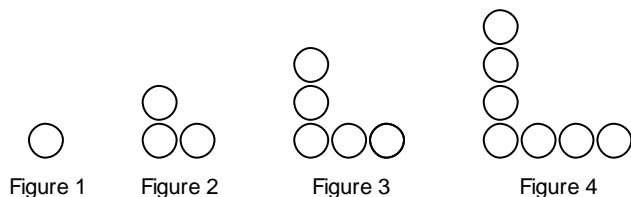
Figure, f	1	2	3	4	5
Number of Triangles, t	2	4	6	8	10

- a. $2f$ b. $2 + t$ c. $2t$ d. $2 + f$
- ___ 3. This pattern of unit squares continues. Which equation below relates the number of squares, n , to the figure number, f ?



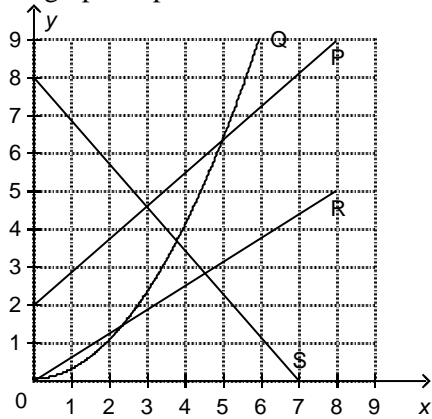
- i) $n = 3f + 4$
 ii) $n = 3f + 1$
 iii) $f = 3n + 1$
 iv) $f = 4 + 3n$

- a. iii b. ii c. iv d. i
- ___ 4. Determine an equation that relates the number of circles, C , to the figure number, n .



- a. $C = 2n - 1$ b. $C = n \times n - 1$ c. $C = 2n + 1$ d. $C = n + 1$

5. Which graphs represent a linear relation?



- a. P only b. P, R, and S c. P and S d. P and R

6. Which tables of values represent a linear relation?

i)

x	1	2	3	4	5
y	4	7	12	19	28

ii)

x	0	1	2	3	4
y	0	5	10	15	20

iii)

x	1	2	3	4	5
y	5	9	13	17	21

iv)

x	0	1	2	3	4
y	12	11	10	9	8

- a. ii, iii, and iv b. ii and iii c. All of these d. i and iv

_____ 7. Complete the table of values.

$$y = 9 - 5x$$

x	2	4	6	8
y				

a.

x	2	4	6	8
y	4	-1	-6	-11

c.

x	2	4	6	8
y	4	8	12	16

b.

x	2	4	6	8
y	8	16	24	32

d.

x	2	4	6	8
y	-1	-11	-21	-31

_____ 8. This table of values represents a linear relation. Complete the table.

x	1	3	5	7
y	9	17		

a.

x	1	3	5	7
y	9	17	25	33

c.

x	1	3	5	7
y	9	17	19	21

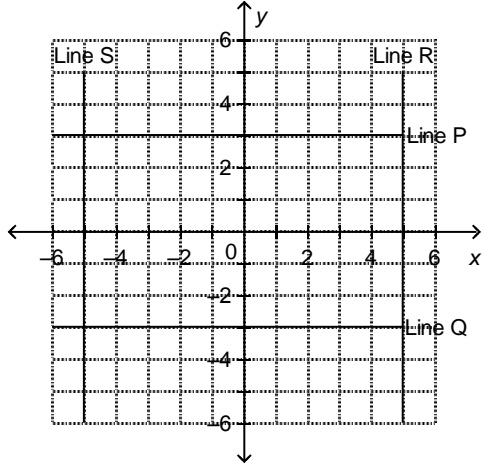
b.

x	1	3	5	7
y	9	17	21	25

d.

x	1	3	5	7
y	9	17	45	63

9. Which line is the graph of $x + 5 = 0$?



- a. Line R b. Line Q c. Line P d. Line S

10. For the equation $4x - 2y = 8$, make a table of values for $x = -2, 0,$ and 2 .

a.

x	-2	0	2
y	-8	-4	0

c.

x	-2	0	2
y	8	4	1

b.

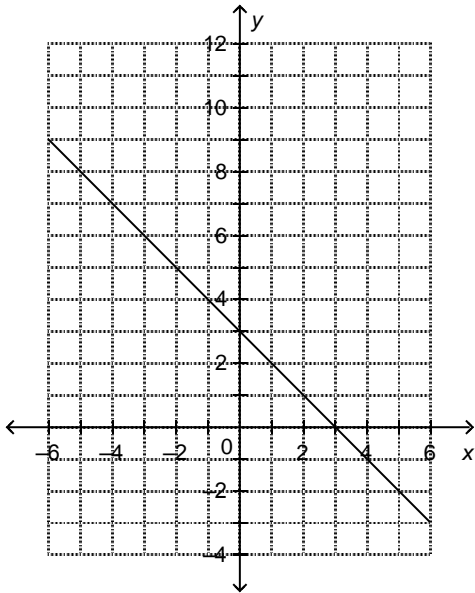
x	-2	0	2
y	-8	0	1

d.

x	-2	0	2
y	0	-4	8

___ 11. Which equation describes the graph?

- i) $x + y = 3$
- ii) $x - y = 3$
- iii) $y - x = 3$
- iv) $x + y = -3$



- a. i
- b. ii
- c. iii
- d. iv

___ 12. Which equations describe vertical lines?

- i) $x + 5 = 12$
- ii) $y - 12 = 5$
- iii) $x + y = 5$
- iv) $12x = 5$

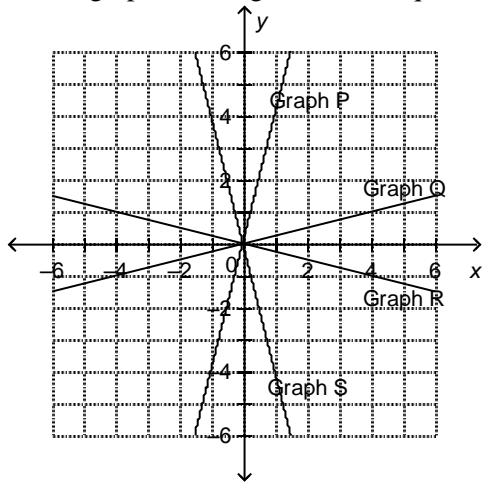
- a. i and iii
- b. ii and iii
- c. ii and iv
- d. i and iv

___ 13. Which equations describe oblique lines?

- i) $5x + 9 = 14$
- ii) $5x + 9y = 14$
- iii) $9y + 5 = 14$
- iv) $5x = 9y$

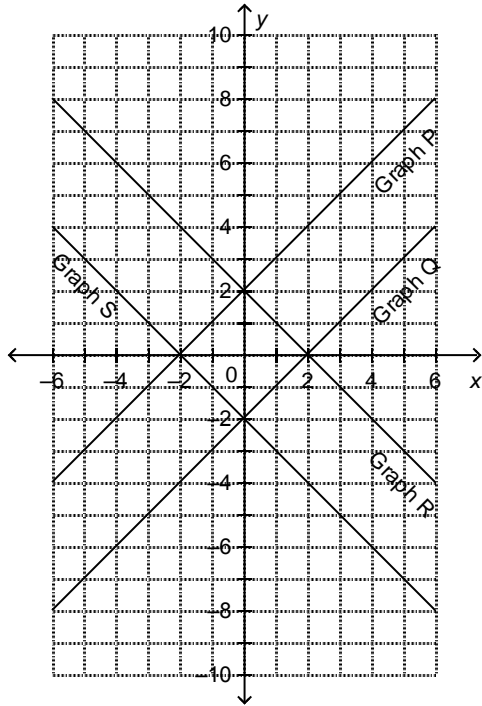
- a. iii and iv
- b. ii and iv
- c. i and iii
- d. i and iv

___ 14. Which graph on this grid has the equation $y = 4x$?



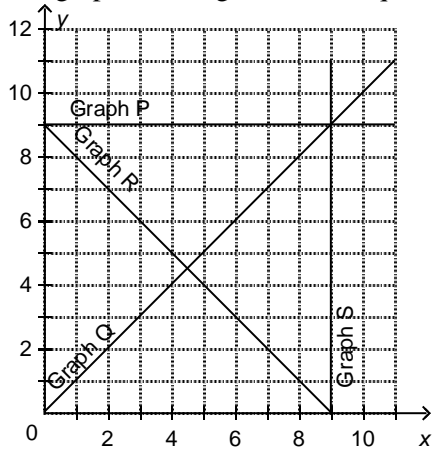
- a. Graph Q b. Graph R c. Graph S d. Graph P

___ 15. Which graph on this grid has the equation $y = x - 2$?



- a. Graph S b. Graph Q c. Graph P d. Graph R

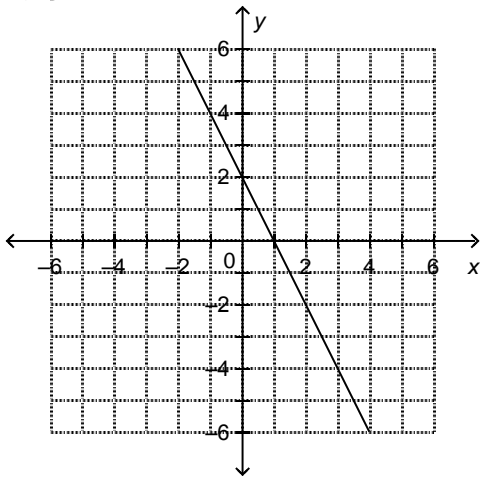
16. Which graph on this grid has the equation $x = 9$?



- a. Graph S b. Graph Q c. Graph R d. Graph P

17. Which equation describes the graph below?

- i) $y = 2x$
- ii) $y = 2x + 2$
- iii) $y = -x + 2$
- iv) $y = -2x + 2$



- a. iii b. ii c. iv d. i

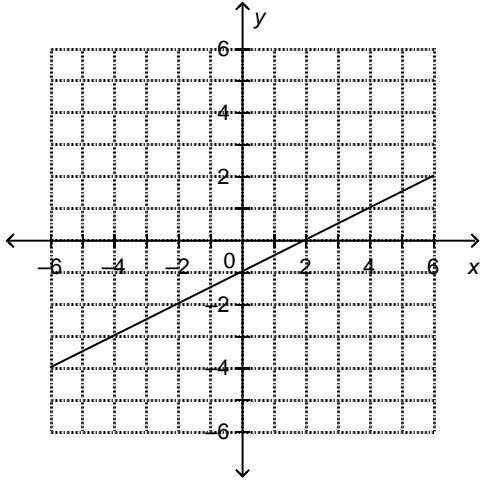
18. Which equation describes the graph below?

i) $y = \frac{1}{2}x + 1$

ii) $y = \frac{1}{2}x - 1$

iii) $y = -2x - 1$

iv) $y = 2x - 1$



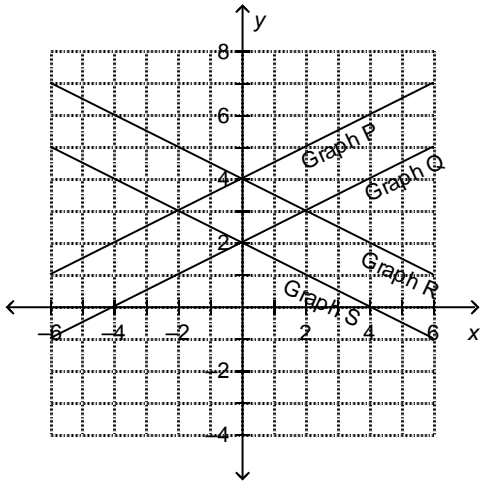
a. iii

b. i

c. ii

d. iv

19. Which graph on this grid has the equation $x + 2y = 4$?



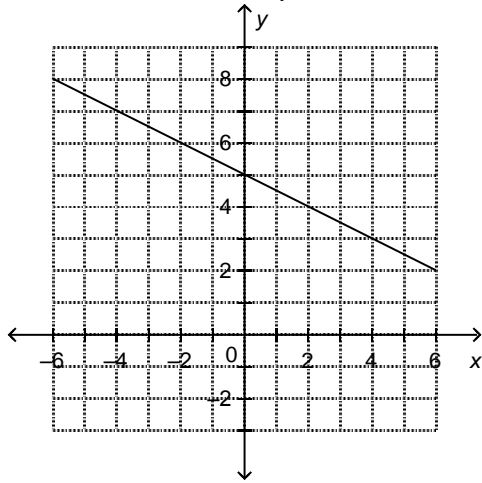
a. Graph Q

b. Graph P

c. Graph S

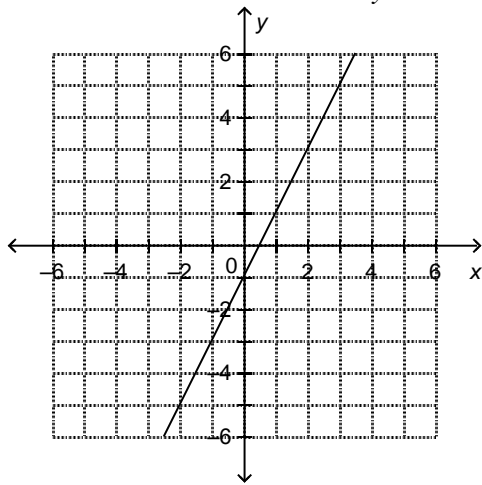
d. Graph R

20. This graph represents a linear relation.
Determine the value of y when $x = 3$.



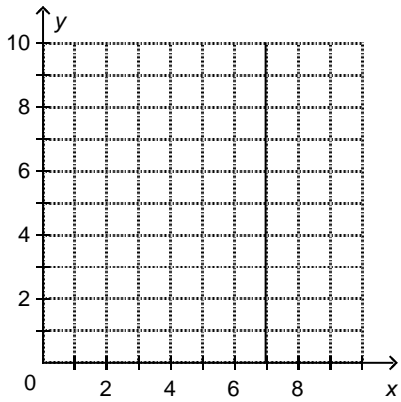
- a. 5 b. 6.5 c. 3.5 d. 10

21. This graph represents a linear relation.
Determine the value of x when $y = -2$.



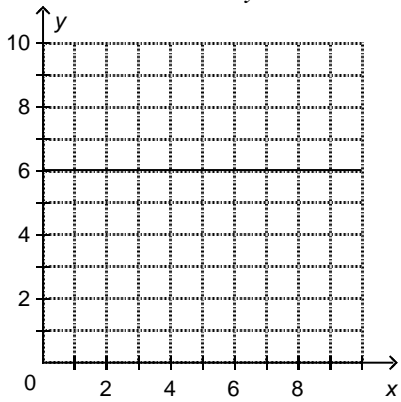
- a. -1 b. -0.5 c. 0.5 d. -1.5

- _____ 22. This graph represents a linear relation.
Determine the value of x when $y = 5$.



- a. 12 b. 5 c. 0 d. 7

- _____ 23. This graph represents a linear relation.
Determine the value of y when $x = 9$.



- a. 15 b. 6 c. 9 d. 0

Short Answer

24. In a table of values for a pattern, $P = 17$ when $n = 2$. Which equation might represent the pattern?
- i) $P = 17n$
 - ii) $P = 9n$
 - iii) $P = 6n + 5$
 - iv) $P = 17n - 9$

25. The pattern in this table continues. Write an equation that relates the term value to the term number.

Term Number, t	1	2	3	4	5
Term Value, w	5	8	11	14	17

26. a) Which table of values represents a linear relation?

i)

x	1	2	3	4
y	12	0	-4	-6

ii)

x	1	2	3	4
y	11	7	3	-1

iii)

x	1	2	3	4
y	13	10	5	-2

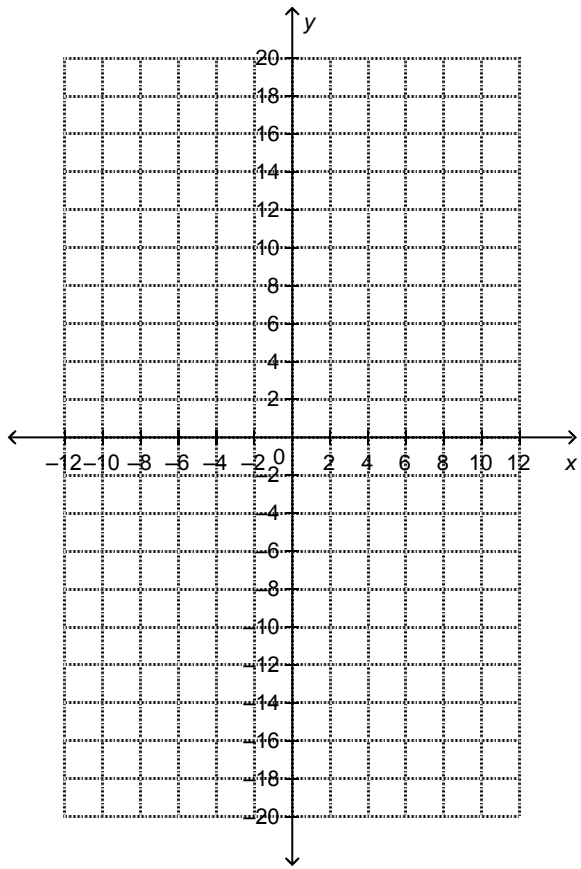
- b) Write an equation that represents the linear relation.

27. a) Create a table of values for the linear relation $y = \frac{1}{2}x - 1$. Use -4, -2, 0, 2, 4 for values of x .

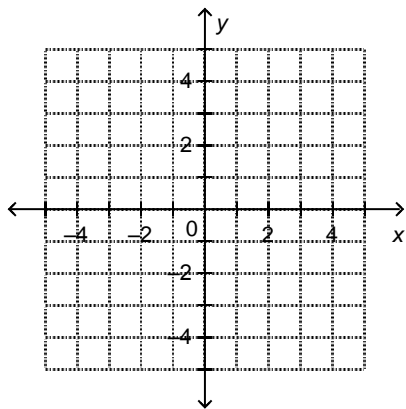
x	-4	-2	0	2	4
y					

28. Create a table of values for the linear relation $y = 4 - 4x$, then graph the relation. Use values of x from 0 to 6.

x	0	1	2	3	4	5	6
y							



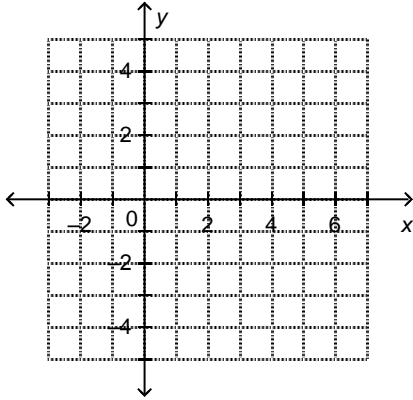
29. Graph the equation $2x - 3 = 3$.



30. Graph the following lines on the same grid. Label the lines.

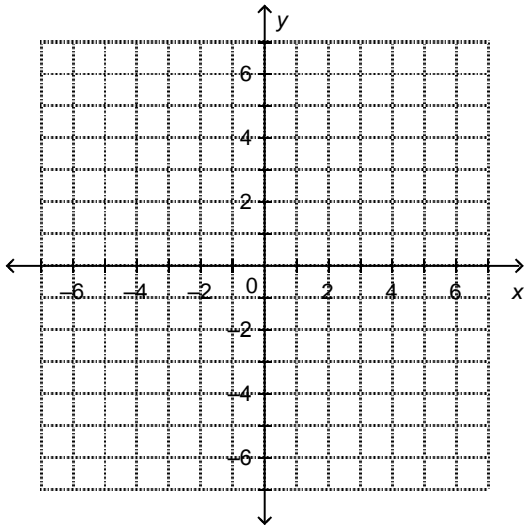
i) $y = 2$

ii) $x = 4$



31. Graph these equations on the same grid. What shape is formed by the lines?

- i) $x = -3$
- ii) $x - 5 = 0$
- iii) $y + 2 = 0$
- iv) $y - 5 = 0$



32. a) For each equation, make a table of values for the given values of x .

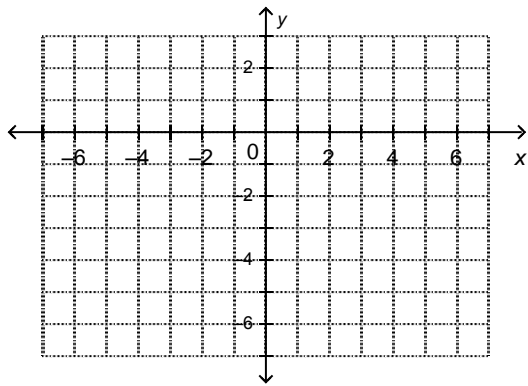
- i) $x + 2y = -4$; for $x = -6, 0,$ and 4

x	-6	0	4
y			

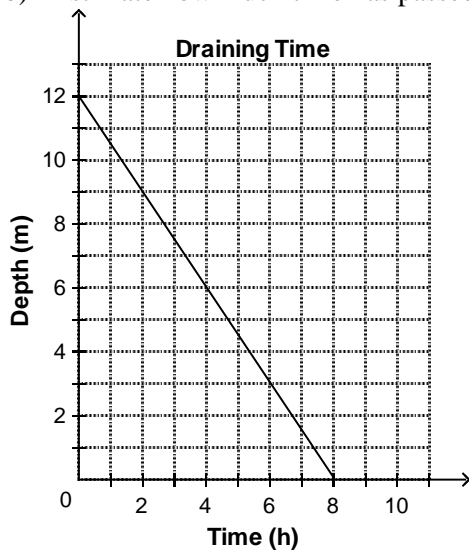
- ii) $x - 3y = 2$; for $x = -4, -1,$ and 5

x	-4	-1	5
y			

b) Graph the equations on the same grid.



33. This graph shows the depth of water in a tank, in metres, as the water drains out.
- Estimate the depth of water after 3 h.
 - Estimate how much time has passed if there is 8.5 m of water in the tank.



65+5

Answer Section

MULTIPLE CHOICE

1. ANS: C
2. ANS: A
3. ANS: B
4. ANS: A
5. ANS: B
6. ANS: A
7. ANS: D
8. ANS: A
9. ANS: D
10. ANS: A
11. ANS: A
12. ANS: D
13. ANS: B
14. ANS: D
15. ANS: B
16. ANS: A
17. ANS: C
18. ANS: C
19. ANS: C
20. ANS: C
21. ANS: B
22. ANS: D
23. ANS: B

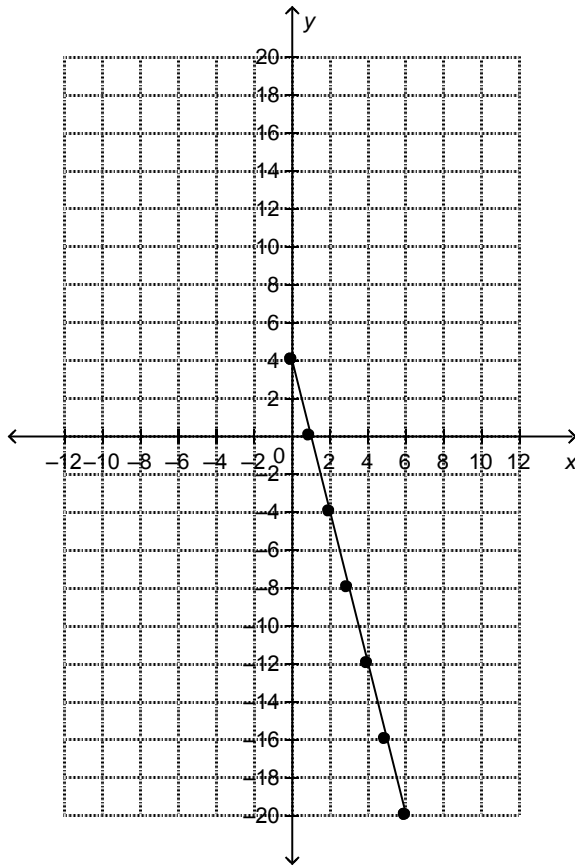
SHORT ANSWER

24. ANS:
iii
25. ANS:
 $w = 3t + 2$
26. ANS:
a) ii
b) $y = 15 - 4x$
27. ANS:
a)

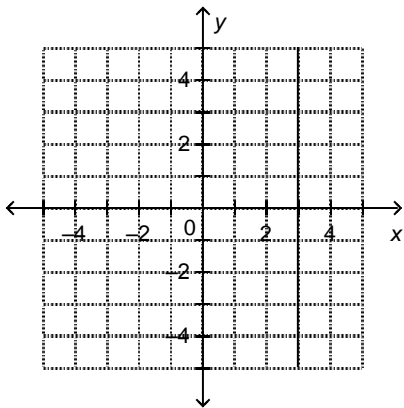
x	-4	-2	0	2	4
y	-3	-2	-1	0	1

28. ANS:

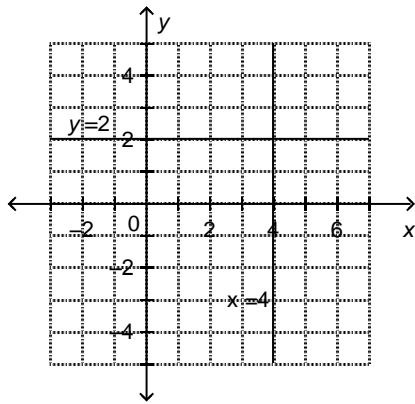
x	0	1	2	3	4	5	6
y	4	0	-4	-8	-12	-16	-20



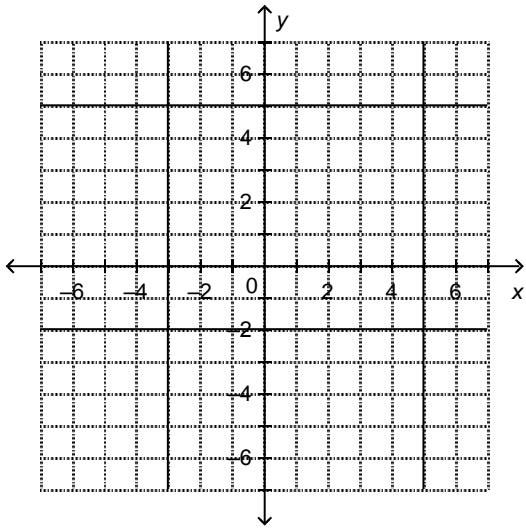
29. ANS:



30. ANS:



31. ANS:



The lines intersect to form a rectangle.

32. ANS:

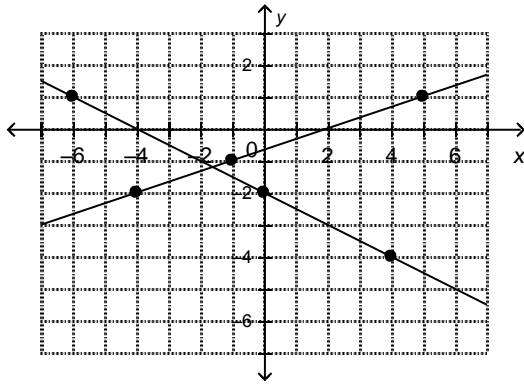
a)

x	-6	0	4
y	1	-2	-4

b)

x	-4	-1	5
y	-2	-1	1

c)



33. ANS:

- a) 7.5 m
- b) 2.33 h