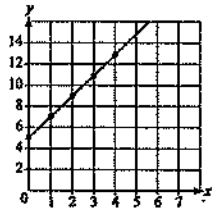
PRACTICE TEST

Make a table of values for the ordered pairs on the following graphs. Describe the pattern on each graph.

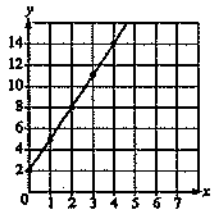
1.



x	0	1	2	3	4
y	5	7	9	11	13

x: +1
y: +2
or $y = 2x + 5$

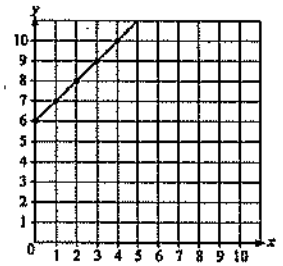
2.



x	0	1	2	3	4
y	2	5	8	11	14

x: +1
y: +3
or $y = 3x + 2$

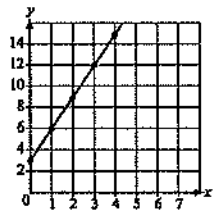
3.



x	0	1	2	3	4
y	6	7	8	9	10

x: +1
y: +1
or $y = x + 6$

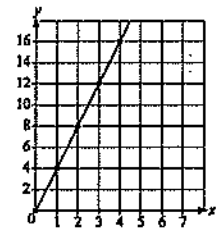
4.



x	0	1	2	3	4
y	3	6	9	12	15

x: +1
y: +3
or $y = 3x + 3$

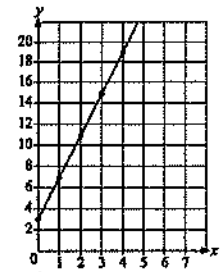
5.



x	0	1	2	3	4
y	0	4	8	12	16

x: +1
y: +4
or $y = 4x$

6.

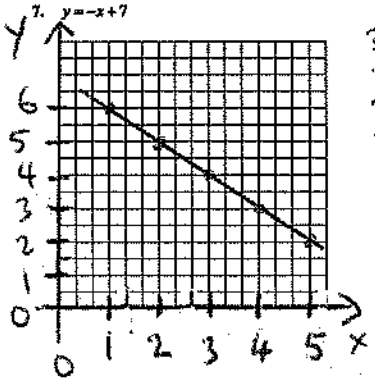


x	0	1	2	3	4
y	3	7	11	15	19

x: +1
y: +4
or $y = 4x + 3$

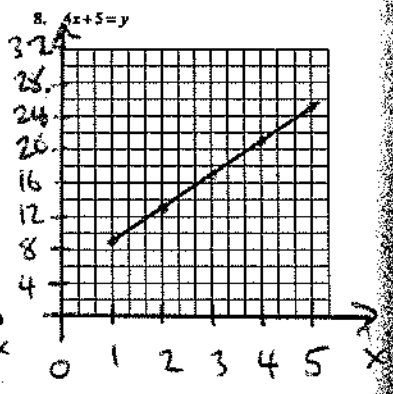
Draw a graph for the given relations. Use the values 1 through 5 for x in the table of values.

7. $y = -x + 7$



x	1	2	3	4	5
y	6	5	4	3	2

8. $4x + 5 = y$



x	1	2	3	4	5
y	9	13	17	21	25

Key

Look at the following tables of values and determine if a pattern exists.

9.

x	y
2	12
4	14
6	16
8	18
10	20

Yes, x: +2
y: +2

10.

x	y
1	1
2	10
3	18
4	20
5	23

No, x: +1 but no y pattern

11.

x	y
2	5
4	7
6	8
8	10
10	13

No, x: +2 but no y pattern

12.

x	y
1	10
2	11
3	12
4	13
5	14

Yes, x: +1, y: +1

13.

x	y
2	17
4	19
6	21
8	23
10	25

Yes, x: +2, y: +2

14.

x	y
1	1
2	3
3	4
4	7
5	10

No, x: +1 but no y pattern

Use the following information to answer the next five questions.

Sahara saves $50 each month from her salary.

15. Make a table of values showing the amount of savings for each month, for the first five months.

x	y
1	50
2	100
3	150
4	200
5	250

16. Is this a linear relation? Why?

Yes, as x goes up by 1, y goes up by 50.

17. What is the linear relation?

$y = 50x$

18. Calculate the amount Sahara saves after 8 months.

$y = 50(8) = \$400$

19. After how many months will she have saved $1 000?

$y = \$1000$ in $y = 50x$, find x.

$1000 = 50x$

$20 = x$

Use the following information to answer the next four questions.

Samuel wants to buy some new shirts. The cost of a shirt in a store is $15 and the store offers a $1 discount at the till.

20. Make a table of values showing the cost of the shirts in relation to the number of shirts purchased, for the first five shirts.

x	y	
1	14	← 15 - 1
2	29	← 15(2) - 1
3	44	
4	59	
5	74	

21. Is this a linear relation? Why?

Yes, as x goes up by 1, y goes up by 15.

22. What is the linear relation?

$y = 15x - 1$

23. What is the total cost if Samuel purchases 6 shirts?

$y = 15(6) - 1$

$= 90 - 1$

$= \$89$

Use the following information to answer the next five questions

Wayne earns a monthly salary of $2 300 and a commission of $150 for each car he sells.

24. Make a table of values showing how much he earns in relation to the number of cars he sells, for the first five cars.

x	y	
1	2450	← 2300 + 150
2	2600	← 2300 + 2(150)
3	2750	
4	2900	
5	3050	

25. Is this a linear relation? Why?

Yes, as x goes up by 1, y goes up by 150

26. What is the linear relation?

$y = 2300 + 150x$

27. How much will he earn if he sells 7 cars in a month?

$y = 2300 + 150(7)$

$= 2300 + 1050$

$= \$3350$

28. How many cars does he need to sell to earn $3 800?

$y = \$3800$ in $y = 2300 + 150x$,

find x. $3800 = 2300 + 150x$

$1500 = 150x$

$10 = x$

Use the following information to answer the next five questions.

Wilfred is renting a car for spring break. A rental car costs $40 for the week and $0.25 per kilometre.

29. Make a table of values showing the relation between the rental fee and number of kilometres Wilfred drives, if he drives 10, 20, 30, 40 and 50 kilometres.

x	y
10	42.50
20	45
30	47.50
40	50
50	52.50

← $40 + 0.25(10)$

30. Is this a linear relation? Why?

Yes, as x goes up by 10, y goes up by $2.50.

31. What is the linear relation?

$Y = 40 + 0.25x$

32. What will be the rental cost if Wilfred drives for 100 kilometres?

$y = 40 + 0.25(100)$
$= 40 + 25$
$= \$65$

33. How many kilometres does he drive if his rental fee is $80?

$y = \$80$ in $y = 40 + 0.25x$,
find x, $80 = 40 + 0.25x$
$40 = 0.25x$
$160 = x$