NAME_____DATE_____PER._____

Review: Graphing Linear Functions

Find the slope of the line through the given points.

1. (-4, 2) and (-4, 5)	2. (3, 6) and (-1, -4)	3. (6, 2) and (-1, 2)
m = _____	m = _____	m = _____

Identify the slope and y-intercept. Then sketch the graph of each equation.

4. $y = \dfrac{5}{3}x + 2$ m = _____   b = _____
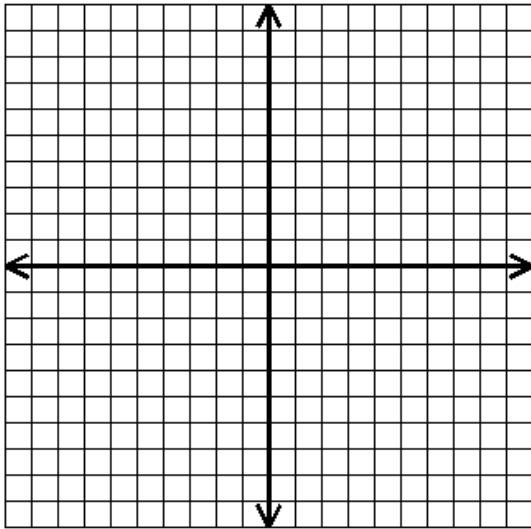
5. $y = -\dfrac{3}{4}x - 3$ m = _____   b = _____
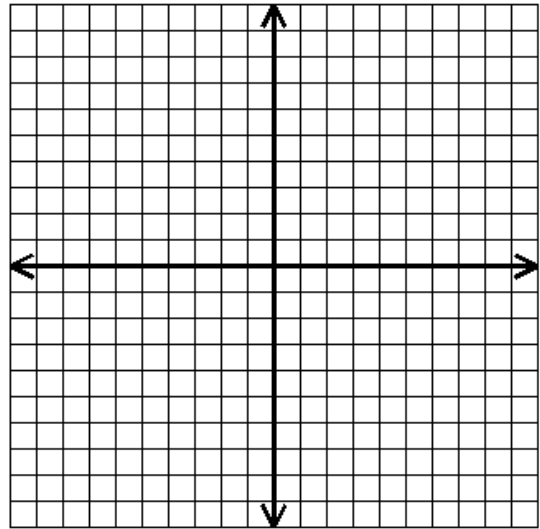
6. $y = \dfrac{1}{3}x - 5$ m = _____   b = _____
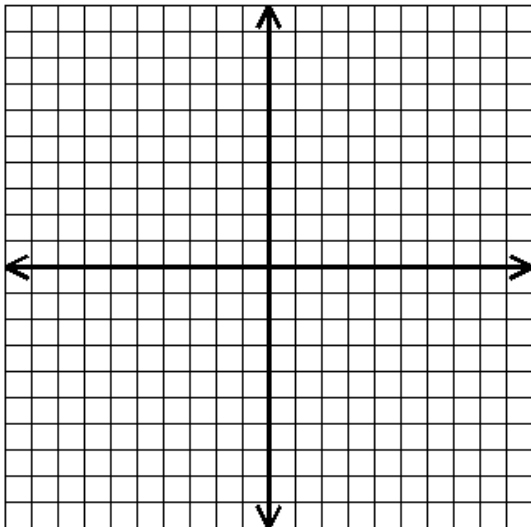
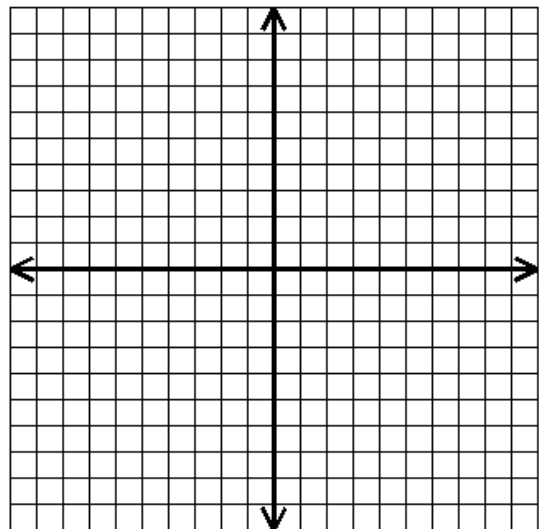7. $y = -2x + 1$ m = _____   b = _____
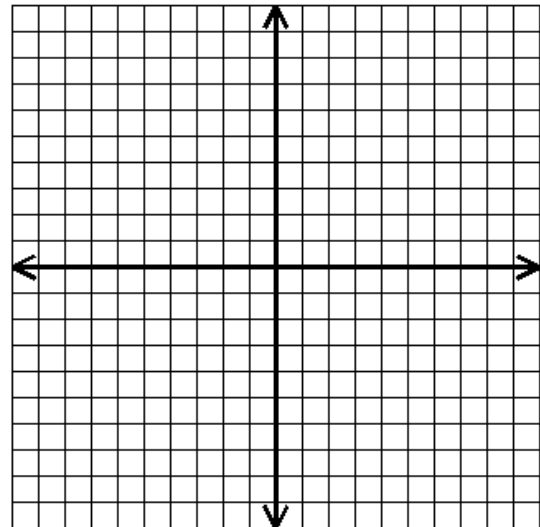
Graph each of the following.

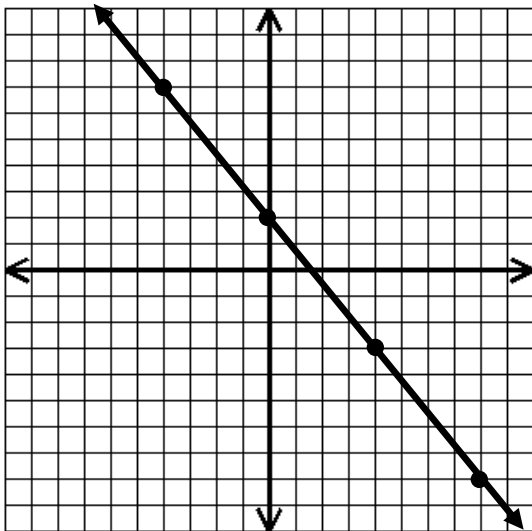8. Passes through (-2, 5) with a slope of $-\dfrac{1}{4}$
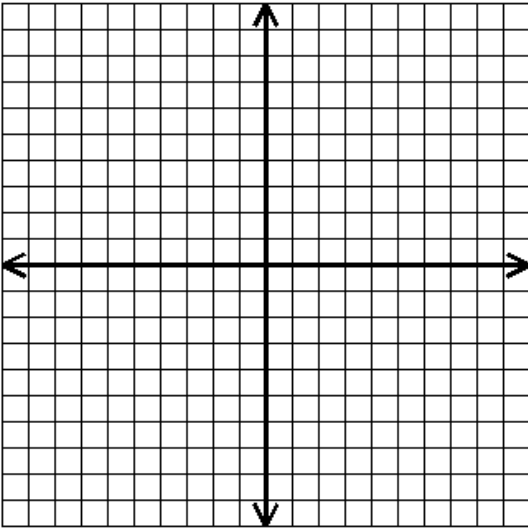
9. Passes through (2, 6) with a slope of 3

Identify the rate of change of y with respect to x, the y-intercept, and the equation of each line.
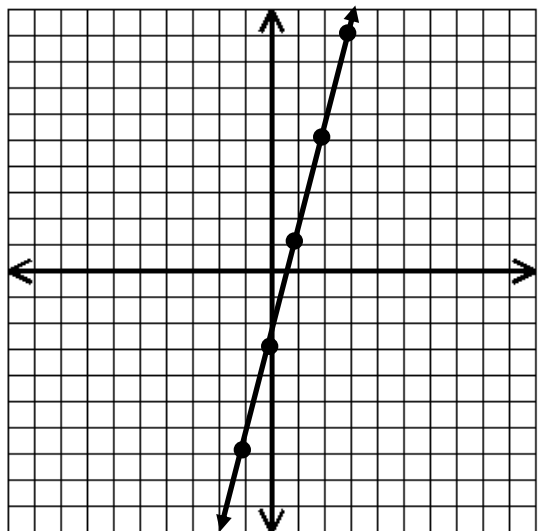
10.

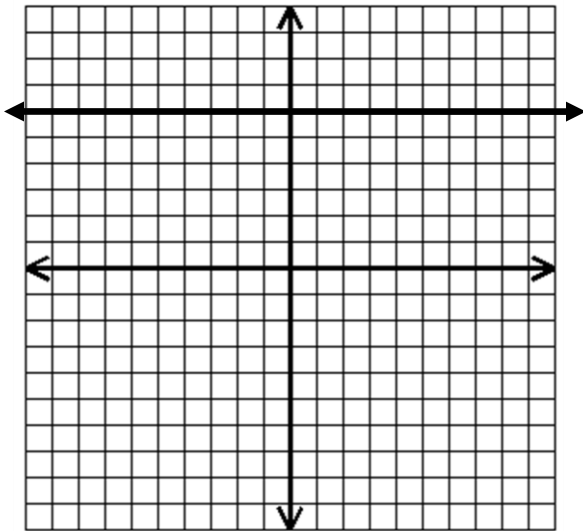Rate of change: _____

y-intercept: _____

Equation: _____
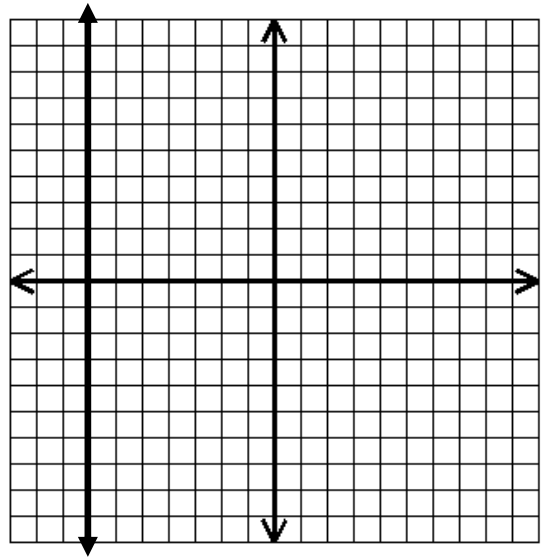
11.

Rate of change: _____

y-intercept: _____

Equation: _____

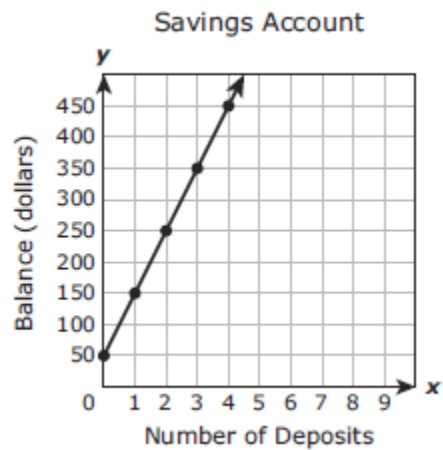**Give the rate of change for each line shown.**

12. _____	13. _____

Answer the following.

14. A savings account balance can be modeled by the graph of the linear function shown on the grid.

Savings Account

Number of Deposits

Which statement about the graph is true?

    A. The initial account balance is $50, and the balance increases $2 for every deposit.
    B. The slope represents the change in deposits with respect to balance.
    C. The slope is positive because for every deposit, the balance increases by $100.
    D. If the pattern continues, at 5 deposits, the account balance will be $600.

15. What is the rate of change of y with respect to x for the equation $y = 5x - 3$?

16. What is the y-intercept for the equation $y = 3x + 6$?

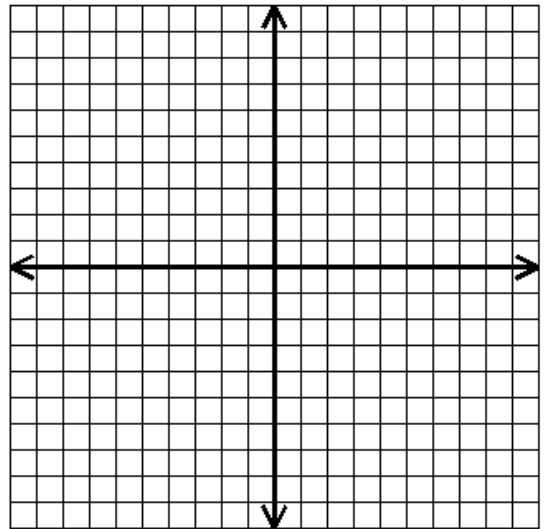17. Determine the slope and the y-intercept of $y = -2x + 8$.

      m = _____   b = _____
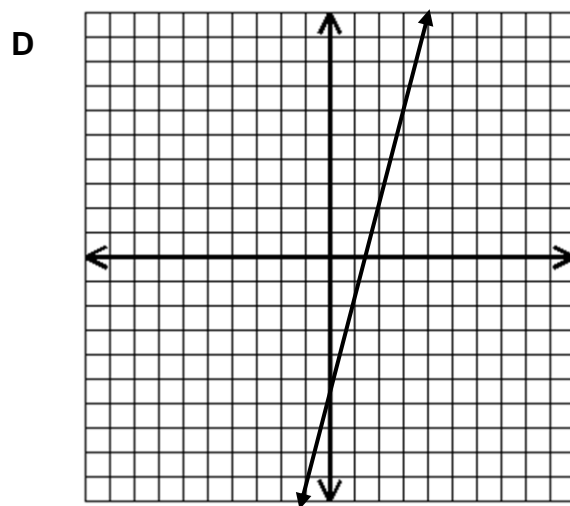
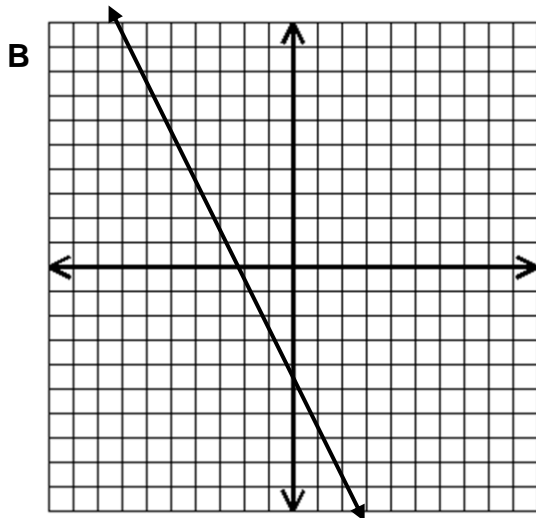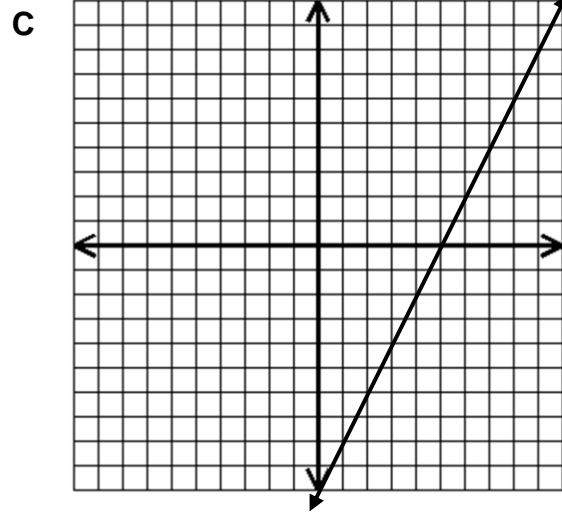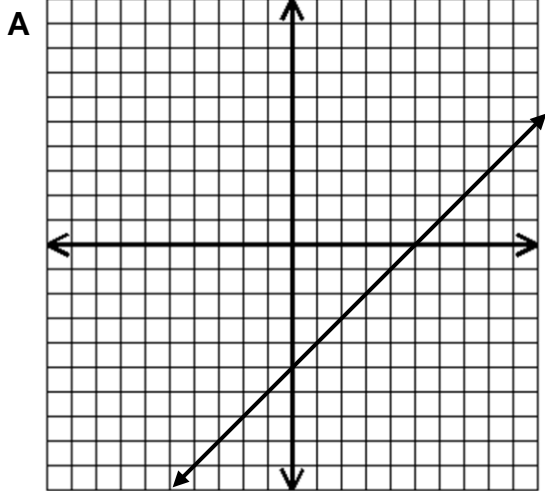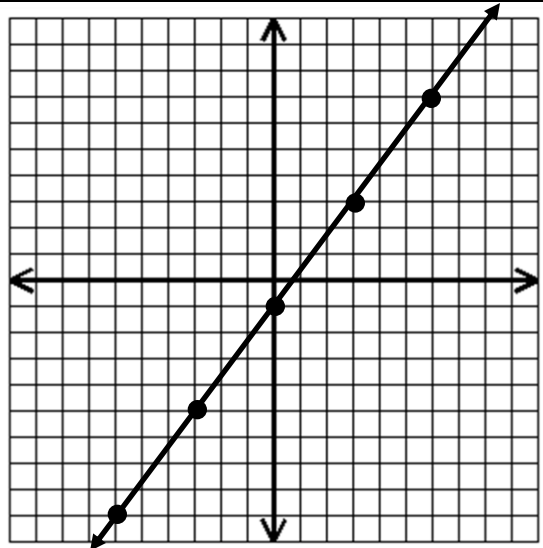18. Write the equation of the linear parent function, and then graph.

Equation: _____

Slope: _____

y-intercept: _____

19. Which graph represents a line containing the point (5, 0) and has a slope of 1?

A

C

B

D

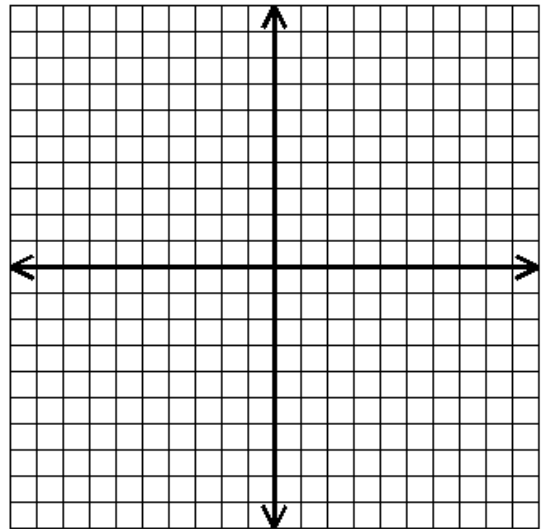20. What are the slope and y-intercept of the line shown?

m = _____

b = _____

21. Write the equation that could be used to generate this table of values.

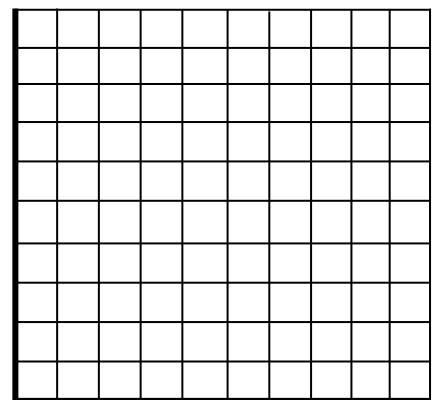| x	y
-2	-1
-1	3
0	7
1	11

Equation:_____

22. The table below shows the relationship between the height of a plant, h, and the time in weeks, w, since it was planted. Write the equation that describes this relationship.

Time in Weeks, w	Height of Plant, h
0	4
1	6
2	8
3	10

Equation:_____

23. Which statement is true about #22 above?

A. The time in weeks since it was planted depends on the height of the plant.
B. The height of the plant depends on the time in weeks since it was planted.
C. The height of the plant depends on the amount of fertilizer used.
D. The time in weeks since it was planted depends on the amount of fertilizer used.

24. A function is described by the equation $f(x) = x^2 + 4$. The replacement set for the independent variable is {-4, -2, 1}. What is the corresponding set for the dependent variable?

25. The cost to rent bowling shoes and bowl games is represented by the relationship $C = 2.99g + 3$ where C represents the total cost and g represents the number of games bowled. If Brendan has $20 to spend on bowling, what is the maximum value of the domain for this function?

26. C'ara's mom gives her $30 to spend at an amusement park. The entrance fee is $12, and it costs $4 for each ride on the ferris wheel. If C'ara only rides the ferris wheel, which inequality can be used to find how many ferris wheel rides, r, she can afford?

   A. $4r + 12 > 30$ C. $4r + 12 \leq 30$

   B. $12r + 4 > 30$ D. $12r + 4 \leq 30$

27. Express the relation as a table, as a graph, and as a mapping. Tell whether or not it is a function.

$f(x) = \{(-2, 5), (-1, 1), (3, 1), (-1, -2)\}$

x	y
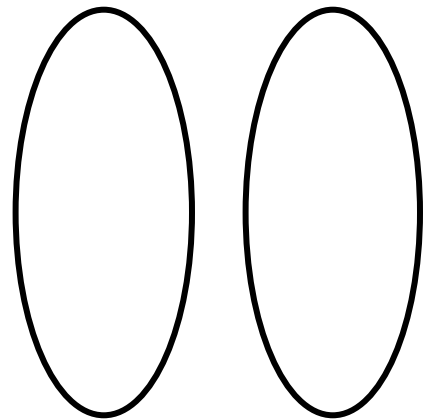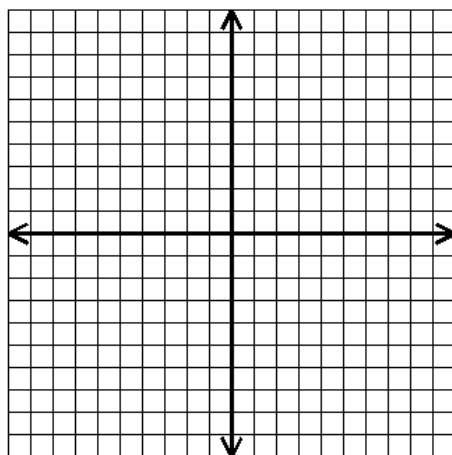
Does this relation
represent a function?

Yes or No

28. Given $f(x) = \{(0, 6), (1, 3), (2, 0), (3, -3)\}$

   $f(3) =$ _____

   If $f(x) = 0$, then $x =$ _____

29. An economist uses the expression

$$\frac{2x^4y^3z^{-1}}{3yz^2}$$

to relate the inflation rate, x; the unemployment rate, y; and the interest rate, z. What is the simplified form of this expression?

A $\dfrac{2x^4y}{3z^3}$ C $\dfrac{2x^4y^2}{3z^3}$

B $\dfrac{2x^4y^4}{3z^3}$ D $\dfrac{2x^4z^3}{3y^2}$

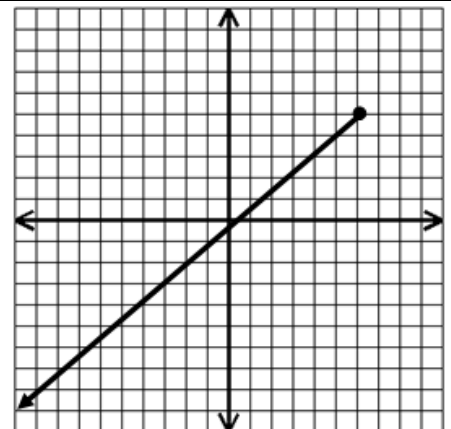30. If (7, 5) and (3, c) are two points on the graph of a with a slope of -2, what is the value of c?
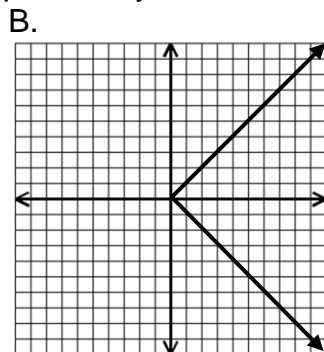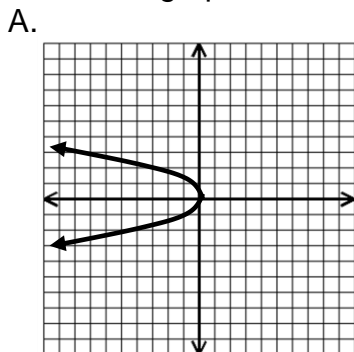
31. Solve: $4x - (3x - 7) = 9$

32. Solve: $5 - 7(y + 1) = -10y + 4$

33. Find the domain and range of the graph shown.

Domain:_____

Range:_____

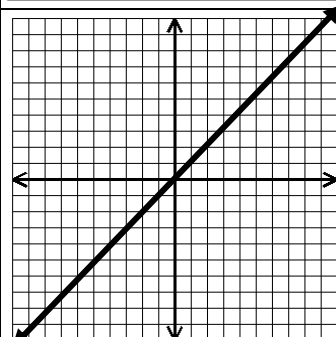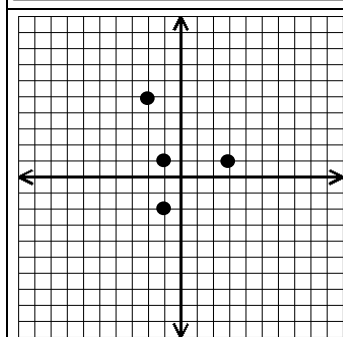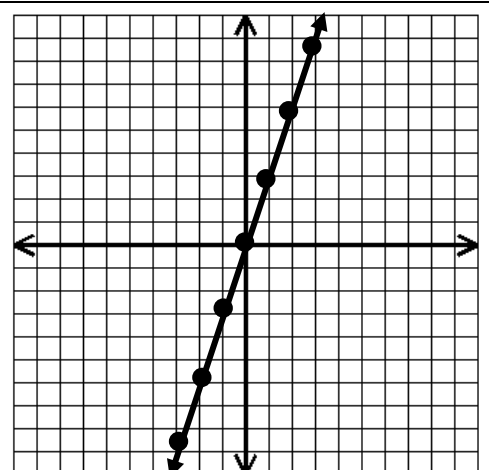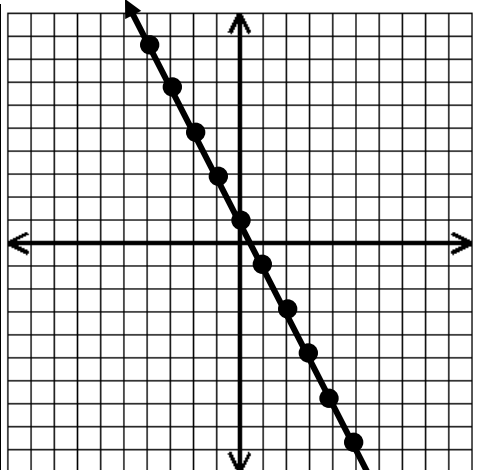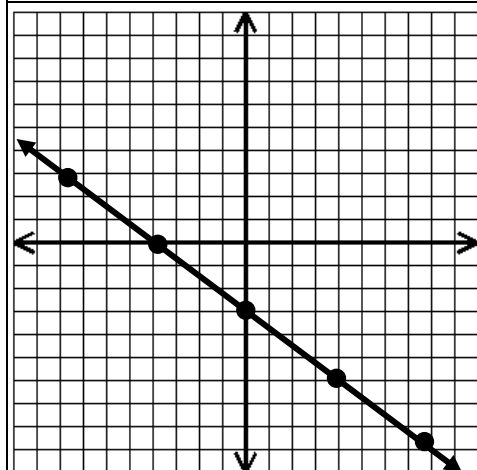34. Which graph below represents y as a function of x?

A.

B.

C.

D.
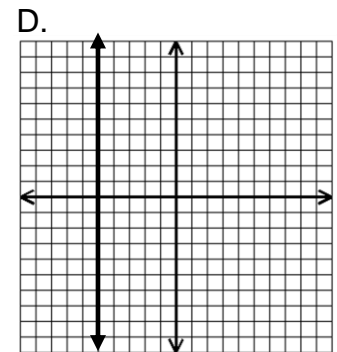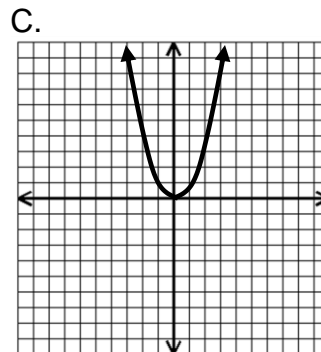
Answers in random order:

A	0	(0, 2)	$y = \dfrac{-5}{4}x + 2$	5	x ≤ 6
B	$\dfrac{5}{2}$	(0, -3)	y = 4x − 3	0	undefined
C	$\dfrac{-5}{4}$	1	y = x	-3	undefined
C	4	-1 or (0, -1)	y = 4x + 7	2	
C	5	6 or (0, 6)	{5, 8, 20}	13	
C	$\dfrac{4}{3}$	8 or (0, 8)	y ≤ 5	2	
No	-2	(0, 0)	y = 2x + 4	2	

x	y
-2	5
-1	1
3	1
-1	-2

-2, 3, -1 → 5, 1, -2

Study, study, study!

Good luck
on your test!