Double Block Algebra 1 Retest Assignment   Name:
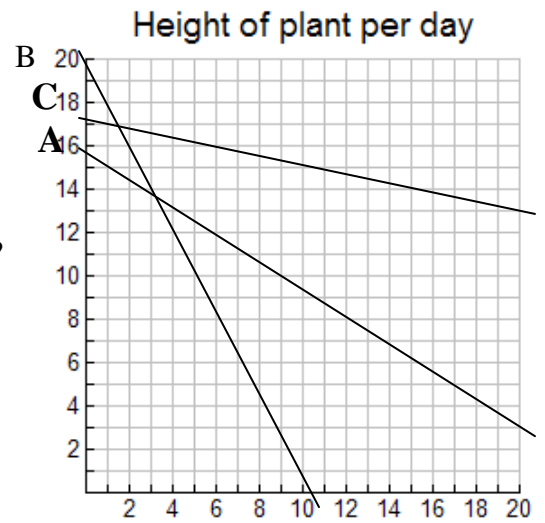
Show all work on lined paper. Use graph paper for the graphs.

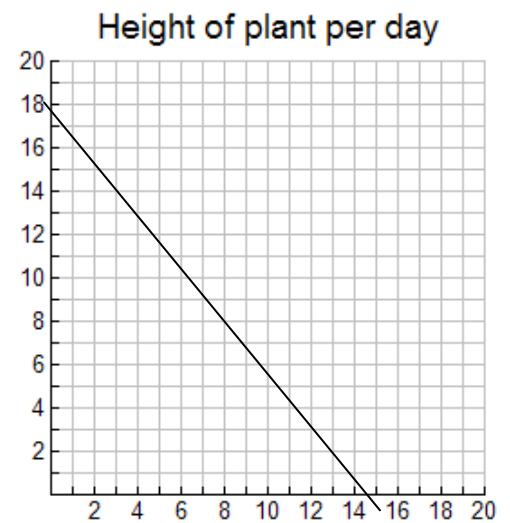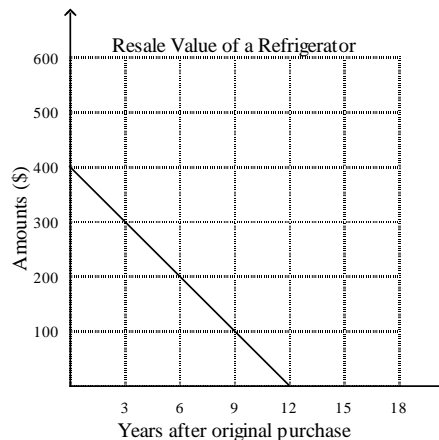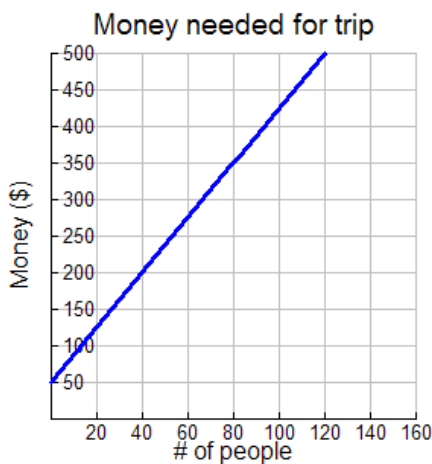1 - 3. Write an equation for each:
   a. A plant (initially 25cm tall) is growing at a rate of 4.5 cm per week. w = # weeks, h = height

   b. Tommy has $250 and is spending $12.50 per hour. h = # hours, m = money

   c. Class has 160 cans and is collecting 15 cans per block. b = # of blocks, c = # of cans

   d. A rocket rises from the ground at a rate of 3.5 feet per second. h = height, t = time

   e. Tia decides she wants to start collecting songs. She plans on buying 10 songs each month.
   s = # of songs, m = # of months.

Use the graph to the right to answer #4.
      4a. Which plant is decreasing fastest? How fast is it growing?

      4b. Which plant is decreasing slowest? How slow is it growing?

Height of plant per day

5. Describe the slope of each graph:

Money needed for trip

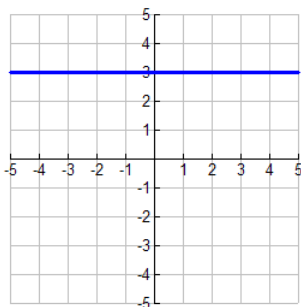Resale Value of a Refrigerator

Height of plant per day

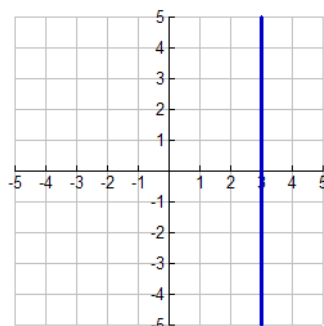6. Find the slope of the line that contains the given points:
a. (2, -7) (3, 8)   b. (0, 0) (6, 2)   c. (-4, -2) (5, 1)

7. Find the slope of each:
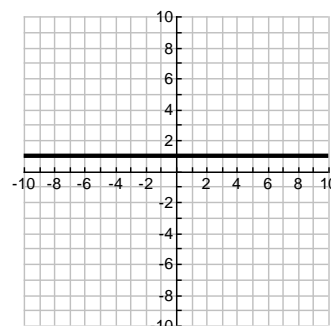
a.

b.

c.

8. Find the rate of change for each table.

X	Y
-1	-25
0	-19
1	-13
2	-7

X	Y
-3	2.5
-2	4
-1	5.5
0	7

X	Y
-1	¼
0	½
1	¾
2	1

9. Write an equation in point slope that has the given slope and passes through the given point:
a. $m = 5$; (2, 4) b. $m = -2/3$; (-2, 7) c. $m = -4/3$; (0, -3)

10. Write a point-slope equation for the tables below.

X	Y
-1	-25
0	-19
1	-13
2	-7

X	Y
-3	2.5
-2	4
-1	5.5
0	7

X	Y
-1	¼
0	½
1	¾
2	1

11. Graph the following equations ON GRAPH PAPER:
a. $y - 2 = ½ (x + 5)$ b. $y + 3 = 4(x - 2)$ c. $y - 1 = -4/3 (x + 5)$

12. Rewrite each equation into slope intercept form.
a. $y - 2 = ½ (x + 5)$ b. $y + 3 = 4(x - 2)$ c. $y - 1 = -4/3 (x + 5)$

13 and 14. Write an equation using the given info:
a. slope = 6, y-int = -8   b. m = ½, b = ¾   c. rate of change: 25, initial value: 62

15. Identify the slope and the y-intercept of each:
a. y = -5x – 4   b. y = 3x + 9   c. y = - ½ x + 3

16. Write an equation in slope intercept form for the line that passes through the given points:
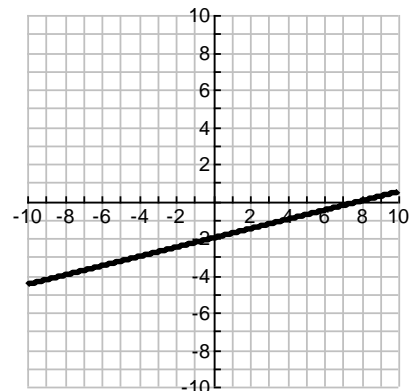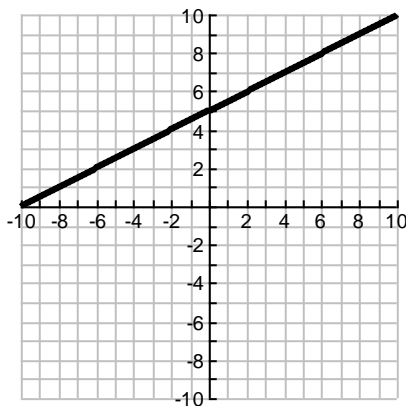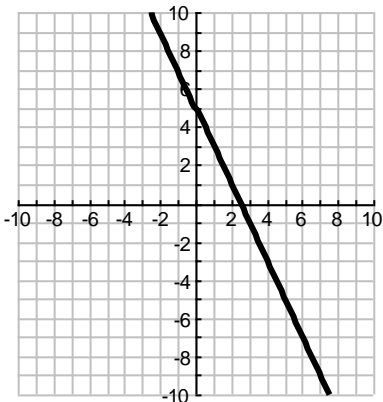a. (5, 7) (2, -3)   b. (5, -1) (1, 0)   c. (0, 7) (5, -2)

17. Write an equation in slope intercept form for each table.

X	Y
2	0
5	-6
6	-8
9	-14

X	Y
-12	1
-6	4
-4	5
-2	6

X	Y
-8	4
4	1
16	-2
48	-10

18. Write an equation for all three graphs.

19. Graph the following ON GRAPH PAPER:

a. y = -2/3 x – 5   b. y = 5/2 x – 3   c. y = 3x – 4
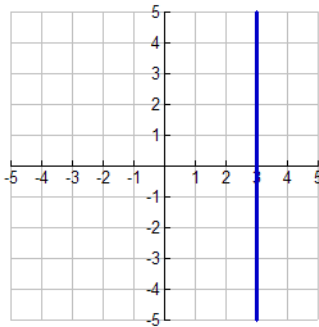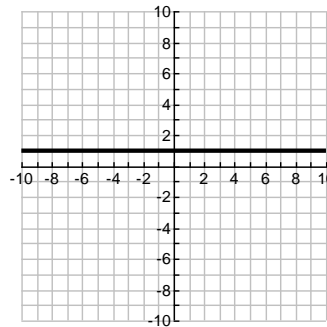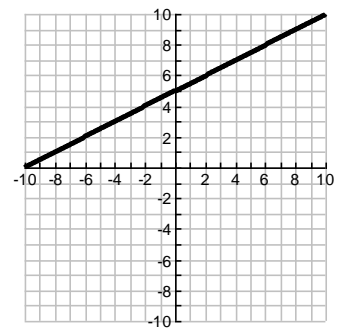
20. Write an equation for each graph.

a.
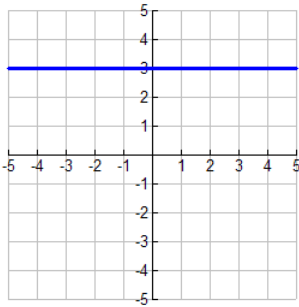
b.
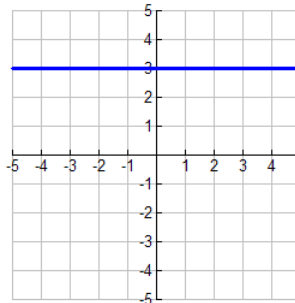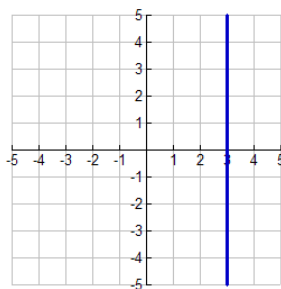

c.

21. Use first differences to find the missing values:

-2	10
-1	6
0	2
1	-2
2	-6
3	-10
4	???

-2	0
-1	1
0	4
1	9
2	16
3	25
4	???

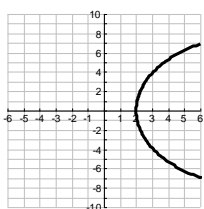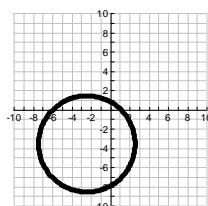| -2	1
-1	3
0	7
1	15
2	31
3	63
4	???

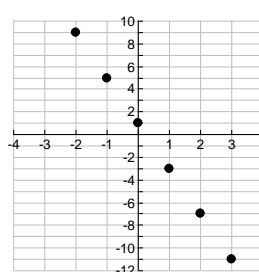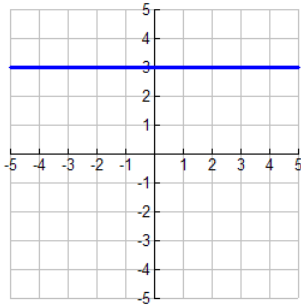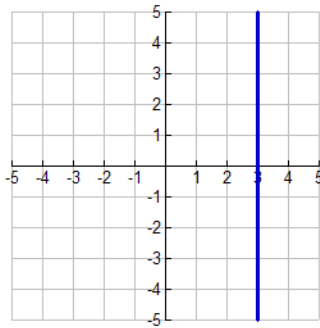22. Which graph(s) are functions? Explain.
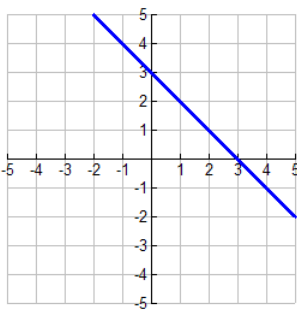
23. Find the domain and range for each graph:
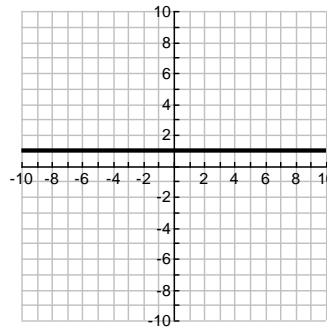
a.

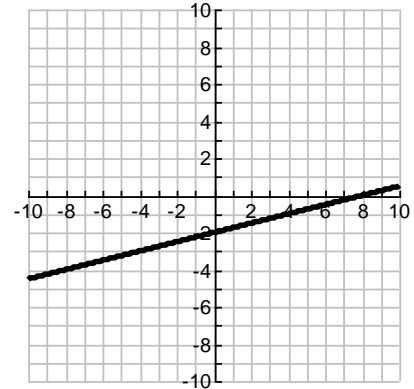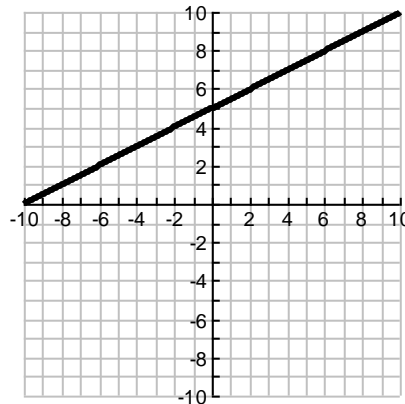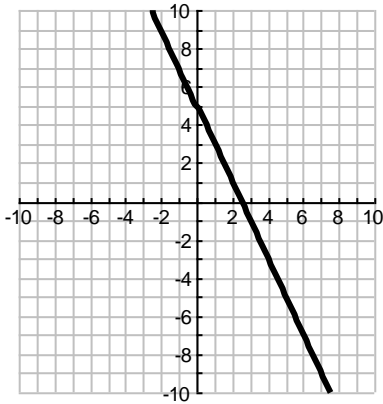b.

c.

24. Find the domain of each graph.

a.

b.

c.

25. Find the x and y intercepts for each graph.

26 - 28. Identify which functions/equations are linear or not. Explain.

a. $f(x) = 5x^2$

b. $f(x) = |3x - 1|$

c. $f(x) = \frac{3}{4}x - 8$

d. $4x^3 = y$

e. $8x - 9y = 10$

d. $y - 9 = \frac{1}{2}(x + 6)$

29 and 31. Solve each:

a. Mark has $42 and is saving $25 per week. (m = money, w = weeks). This can be modeled by the equation m = 25w + 42. How many weeks does he need to have $600?

b. A 10 foot plant is withering away at a rate of 0.5 feet per week. (h = height, w = weeks). This can be modeled by the equation h = 10 − 0.5w. How long will it take the plant to be only 5 feet tall?

c. Mateen is 42 in long and growing at a rate of 2 inches per week. (L = length, w = weeks). This can be modeled by the equation L = 42 + 2w. When will he be 47.75 inches long?

30. Solve each:

a. Mark bikes 6 mph and runs 10 mph. He needs to go 100 miles. An equation modeling the problem is $6b + 10r = 50$ (b = hrs biking, r = hrs running). How long will he bike if he runs for 2.75 hours?

b. Tory has $250 and wants to buy pants (p) at $52 each and socks (s) at $3.50 each. An equation to model this is $52p + 3.50s = 250$. How many socks can he buy if he bought 4 pair of pants?

c. The science club is holding a car wash and charges $7.50 per truck (t) and $5 per car (c). They need to make $450. An equation to model this is $7.50t + 5c = 450$. How many cars do they need to wash if they do 15 trucks?

32. Solve:
    a. $.5(x - 2.5) = 0.952$ b. $-4(3x - 1.2) = -4.75$ c. $-5.1(2x - 7) = -30.6$

33. Solve:
    a. $12r - 15r + 27 = 92$ b. $15 - 8m + 3m = -56$ c. $27 - 5x + 14 - 9x = 14.8$

34. Solve:
    a. $14 - 5x = 2x + 47$ b. $19 + 6r = 37 + 11r$ c. $38 - 9x = 14 + 3x$

35. Solve and graph:
    a. $-8 - 9x > 38$

    b. $32 \leq -8w - 17$

    c. $14 \geq -2x + 24$

36. Solve and graph:
    a. $27 + 8w \geq 3(2w - 15)$

    b. $9(3x - 4) \leq 52 - 31w$

    c. $14 + 7m > 5(3m - 9)$

37. Solve and graph:
    a. $-15 \leq 5x - 12 < 6$

    b. $-25 < 6x - 7 \leq 32$

    c. $0 \leq 9x + 25 < 45$