

Name _____ Date _____

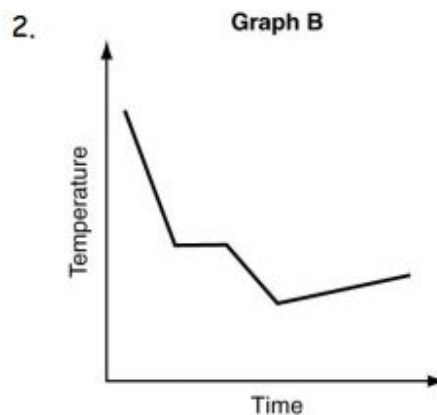
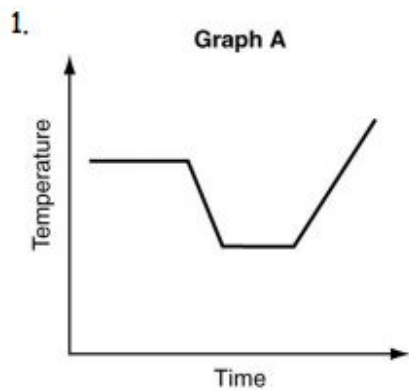
Freshmen Summer Math Project Due 9/20/19 to your Math Teacher

Directions: Answer all 30 questions on this assignment. Each correct answer will receive **two points**. Record your answers on this separate answer sheet. **ALL WORK MUST BE SHOWN TO RECEIVE FULL CREDIT**. A correct answer with no work shown will receive only one point. **Helpful websites:** www.regentsprep.org & www.khanacademy.org

Final Answers:

1. Show answer on graph 2. Show answer on graph	3. _____ _____	
4. Show answer on graph 5. Show answer on graph	6. _____	7. _____
8. _____	9. _____	10. _____
11. _____	** Write 1-2 sentences explaining how you knew which equations represented a linear function. ** _____ _____ _____ _____	
12. _____	13. _____	14. _____
15. _____	16. _____	17. _____
18. _____	19. _____	20. _____
21. _____	22. _____	23. _____
24. _____	25. ** Explain in complete sentences the procedure you use to solve any equation. ** _____ _____ _____ _____	
Questions 26 - 30 are open-ended and should be answered on the appropriate pages.		

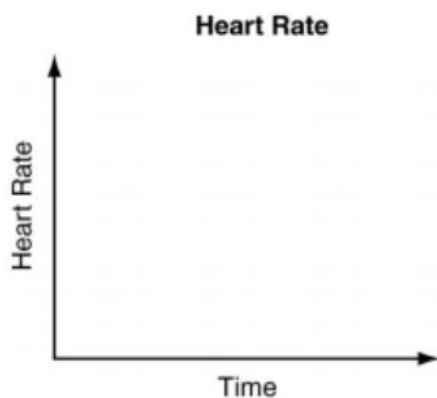
Divide each graph into sections where the graph changes directions. Then label the sections as *increasing*, *decreasing*, or *same*.



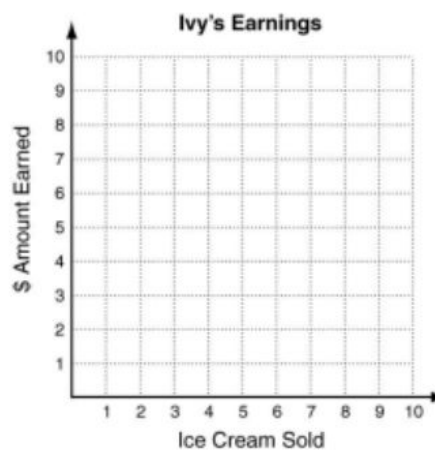
3. Which graph above shows that the air temperature fell steadily, leveled off, fell again, and then increased slightly?

Sketch a graph of each situation. Tell whether the graph is continuous or discrete.

4. The heart rate of someone walking, then running, then resting.

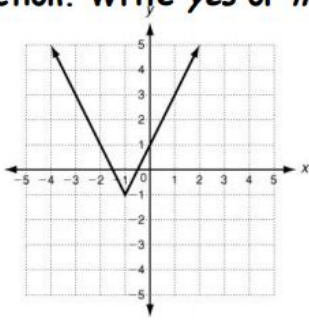


5. Ivy is selling ice cream. Each ice cream costs \$1.50. She has 6 ice creams to sell.

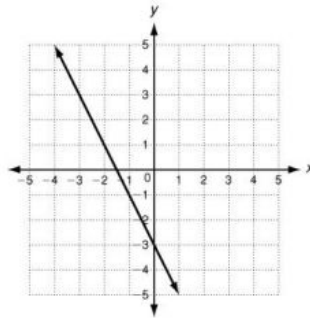


Tell whether each graph, set of ordered pairs, or equation represents a linear function. Write *yes* or *no*.

6.



7.



8.

x	y
-9	5
-5	10
-1	15

9. $\{(-3, 5), (-2, 8), (-1, 12)\}$

10. $2y = -3x^2$

11. $y = 4x - 7$

**** Write 1-2 sentences explaining how you knew which equations represented a linear function. ****

Solve each equation.

12. $6z = -42$

13. $\frac{5}{6}x = 10$

14. $6 = -\frac{3}{5}x$

15. $\frac{2}{3}x = -\frac{3}{5}$

16. $3x - 8 = 4$

17. $\frac{b}{2} - 4 = 26$

18. $\frac{x}{2} + \frac{3}{8} = 1$

19. $\frac{w}{3} + \frac{2}{5} = \frac{1}{15}$

20. $4x + 2 = 5(x + 10)$

21. $-10 + y + 3 = 4y - 13$

22. $3(t + 7) + 2 = 6t - 2 + 2t$

23. $5x - 1 - 4x = x + 7$

24. $2(f + 3) + 4f = 6 + 6f$

25. ** Explain in complete sentences the procedure you use to solve any equation. **

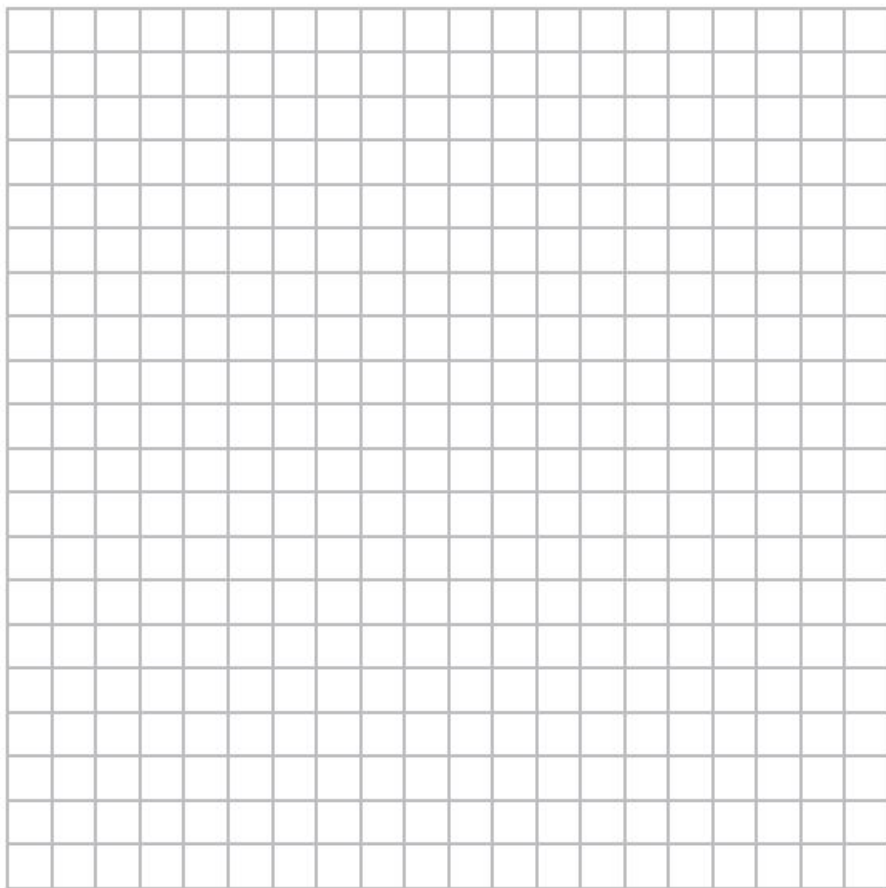
26.

A local business was looking to hire a landscaper to work on their property. They narrowed their choices to two companies. Flourish Landscaping Company charges a flat rate of \$120 per hour. Green Thumb Landscapers charges \$70 per hour plus a \$1600 equipment fee.

Write a system of equations representing how much each company charges.

Determine and state the number of hours that must be worked for the cost of each company to be the same. [The use of the grid below is optional.]

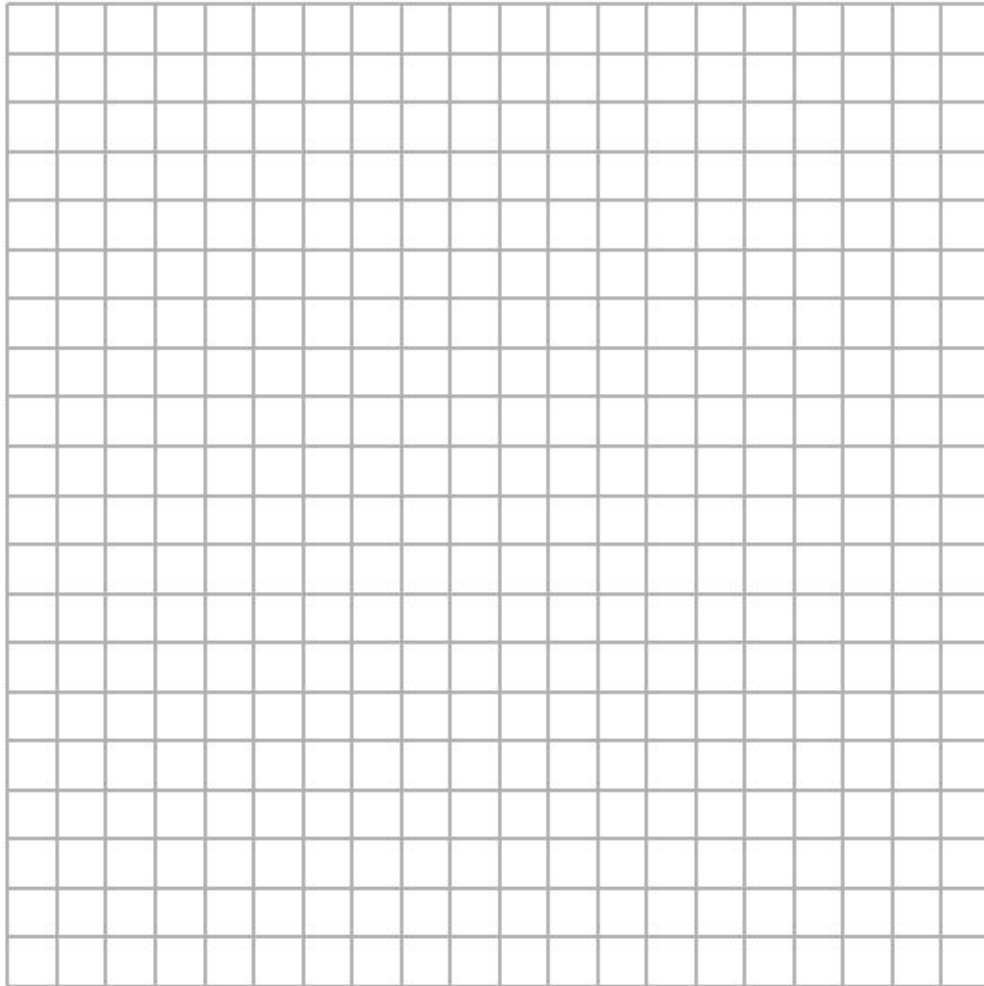
If it is estimated to take at least 35 hours to complete the job, which company will be less expensive? Justify your answer.



27.

During a snowstorm, a meteorologist tracks the amount of accumulating snow. For the first three hours of the storm, the snow fell at a constant rate of one inch per hour. The storm then stopped for two hours and then started again at a constant rate of one-half inch per hour for the next four hours.

- a) On the grid below, draw and label a graph that models the accumulation of snow over time using the data the meteorologist collected.



- b) If the snowstorm started at 6 p.m., how much snow had accumulated by midnight?

28. A cable 20 feet long connects the top of a flagpole to a point on the ground that is 16 feet from the base of the pole. How tall is the flagpole?

Challenge Problems

29.

At the chalkboard the teacher demonstrates the four factors of the number 6, that is, the whole numbers that can divide into 6 and leave no remainder. (Remember, a number is always its own factor; as is 1). Between 1 and 100, there are five numbers that have exactly twelve factors. Find the five numbers.

30.

In a class of fifteen boys, fourteen have blue eyes, twelve have black hair, eleven are overweight and ten are tall. How many tall, overweight, black-haired, blue-eyed boys there must be?