Algebra 1 SUMMER SKILLS SET Name_____

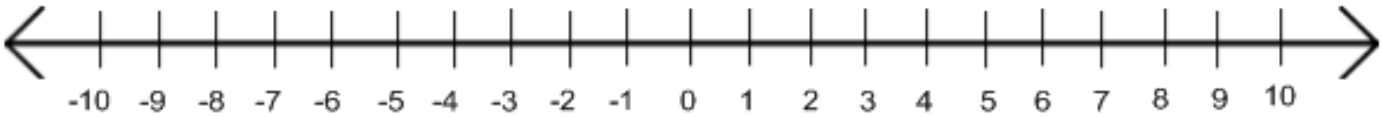
PREREQUISITE Mathematics

Number Lines	**Comparing Numbers**	**Ordering Numbers**	**Tables**	**Graphs**	**Table/Graph Context**	**Predictions**

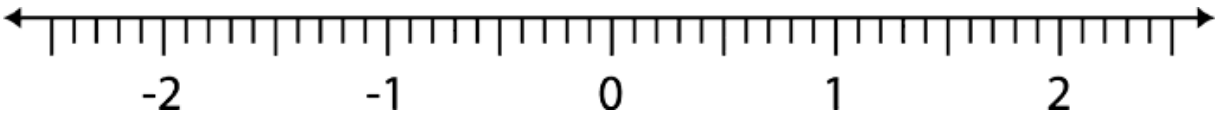
Variables on One Side	Variables on Both Sides	Context	Rate of Change

Number Lines

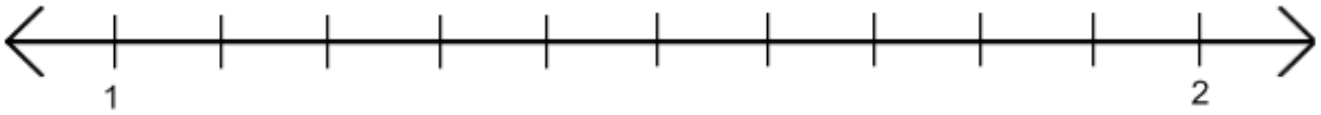
1. Mark and label the following numbers on the number line below: -3 ½, 8, -6.5, 2 ½ , and 0.5



2. Mark and label the following numbers on the number line below: $\frac{3}{5}$, -1.7, $-\sqrt{1}$, -2.3



3. Mark and label the following numbers on the number line below: $\sqrt{3}$, 1.65, $\frac{26}{20}$, $1\frac{2}{8}$



Comparing Numbers Fill in the blank using <, >, or =.

4. $\frac{2}{7}$ ____ 0.22

5. -3.67 _____ -3.62

Ordering Numbers

6. Place the following numbers in order from **least to greatest**:

8.05, 8.51, 8.1, 8.01, 8.15

7. Place the following numbers in order from **greatest to least**:

$-\sqrt{3}$, 1.8, $-\frac{3}{7}$, $-\frac{1}{3}$, $\frac{5}{3}$

Compare Numbers:

8. Fill in the blank using <, >, or =. $\frac{1}{7}$ ___ $\frac{1}{3}$

9. Fill in the blank using <, >, or =. $\frac{3}{5}$ ___ $\frac{9}{15}$

10. Fill in the blank using <, >, or =. $\frac{9}{5}$ ____ 1.6

11. Fill in the blank using <, >, or =. $\frac{5}{3}$ ____ 1.6

12. Fill in the blank using <, >, or =. $\sqrt{7}$ ____ 2

13. Fill in the blank using <, >, or =. $\sqrt{45}$ ____ 6

Create a Table

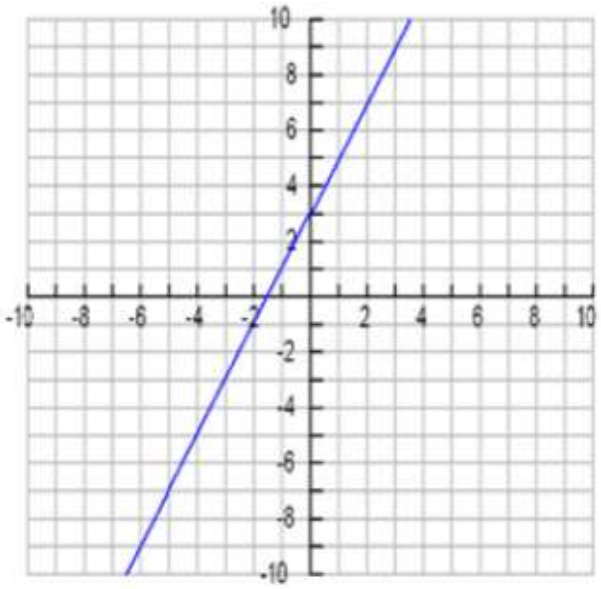
14. Given the function: $P = 5h - 42$, find the output *P* for the following inputs.

h	-3	-1	0	1	3
P					

15. Given the function **$y = 8 - 3x^2$,** find the output, y, for the following inputs.

h	-3	-1	0	1	3
P					

16. Given the graph of the following function, create an input-output table for at least five points.

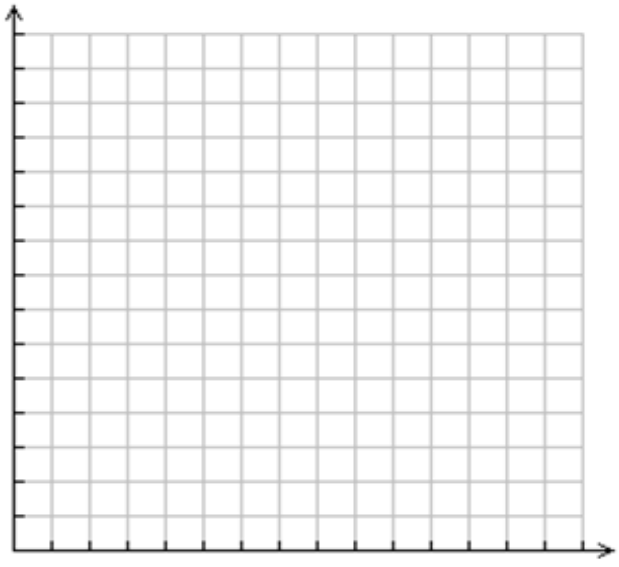


x					
y					

Create a Graph

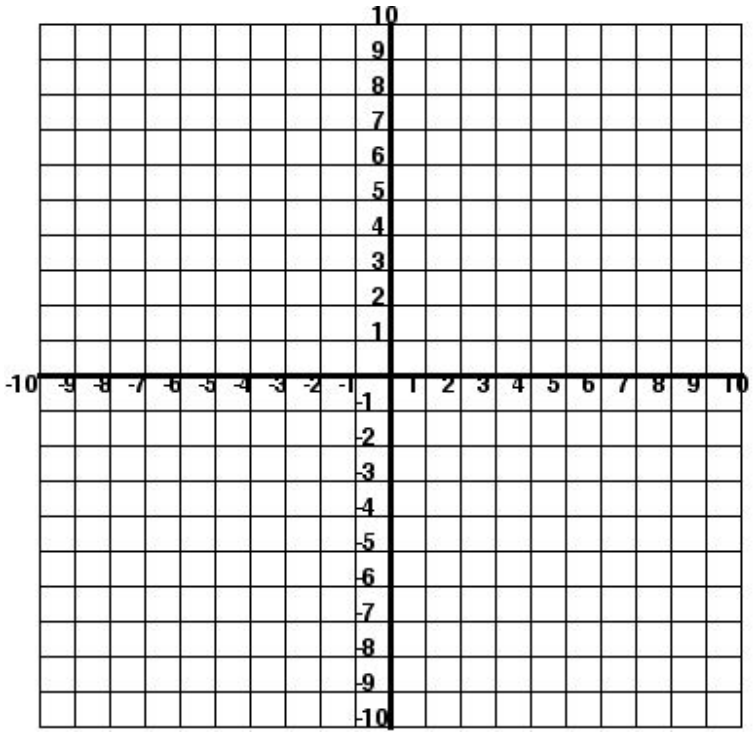
17. Given the table below, create an accurate graph. Include labels for the x and y axis.

Surface Area (feet)	Shipping Cost
3	4.90
6	10.90
7	12.90
11	20.90
19	36.90



18. Given the following equation, create an input-output table. Then create an accurate graph.

$$f(x) = x^2 - 4$$

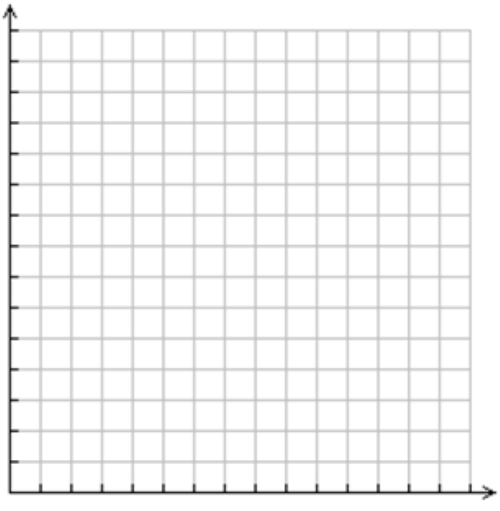


Create a table and graph from context

19. The temperature outside at 8:00pm is 95 degrees. The weather report claims that the temperature (T) will drop by 5 degrees per hour (h).

    a. What will the temperature be at the end of each hour from 8:00 pm to 2:00 am?
    Make a table to display this data.

.



    b. Create a graph to model the temperature outside after 8:00 pm.

Making Predictions

20. Your friend Leah just got a job working at Apple. She will start off making $7.50 per hour and she is expecting to work about 15 hours a week. If Leah owes you $200 for when you paid for her concert ticket, make a prediction about how many weeks will it take Leah to pay you back.

21. Anthony got a job! Use the chart below to predict how much money he will earn after working 9 hours.

Hours Worked	Money Earned
1	7.15
2	14.30
3	21.45

Variables on One Side

Solve the following equations:

22. $4 + x = 13$

23. $4x - 7x = -15$

24. $\frac{a}{6} = \frac{5}{2}$

26. $\frac{1}{4}x + 7 = 5.6$

27. $\frac{2}{9} = \frac{5}{x+4}$

28. $3(2 - 4x) + 8x = 27$

Variables on Both Sides

Solve the following equations:

29. $5x + 8 - 2x = 34 + x$

30. $7(x + 3) + 5x = 12x + 21$

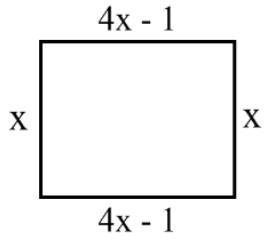
31. $3 - 5(a + 12) - 7 = -5a + 13$

32. $\frac{3}{7}(p + 7) + 7 = p - 12$

Context

Context

33. The rectangle shown in the diagram has a perimeter of 28. Solve for x.



34. Chandra is selling handmade bead bracelets to pay for her spring break trip. Each bracelet sells for $ 7.50. She paid $250 for all the supplies. How many bracelets does she need to sell in order to make a profit of $1000?

    Write and solve an equation that represents the situation.

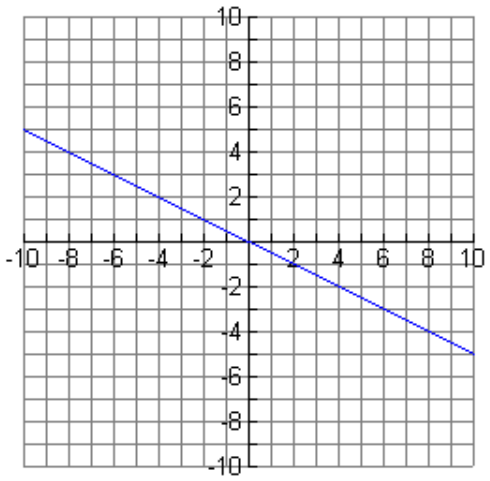
35. You have $20 in your wallet as you walk into Goodwill. You want to get 2 Grandpa Coats at $6 apiece. You also want to get some slippers for your comfy nights in. The slippers are $3 a pair. How many slippers can you afford?

    Write and solve an equation that represents the situation.

Rate of Change

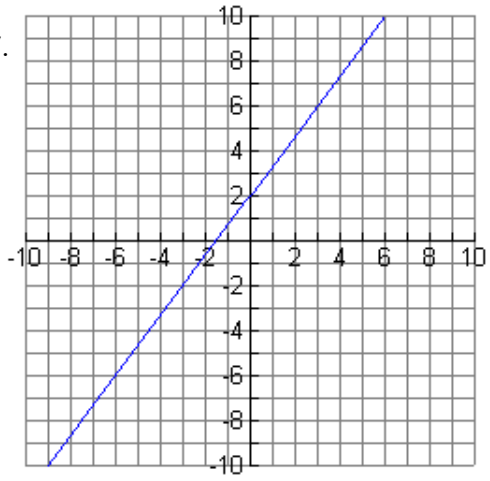
Identify the rate of change.

36..



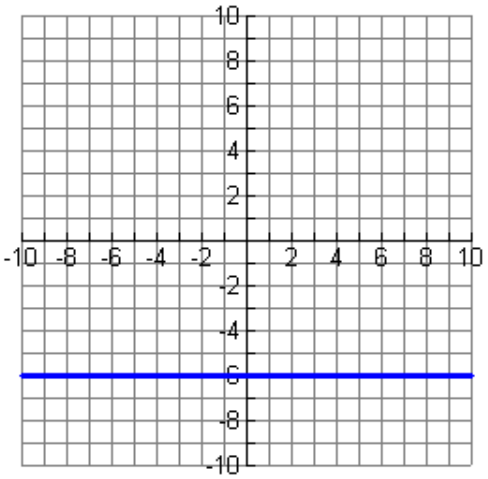
Rate of change _____

37.



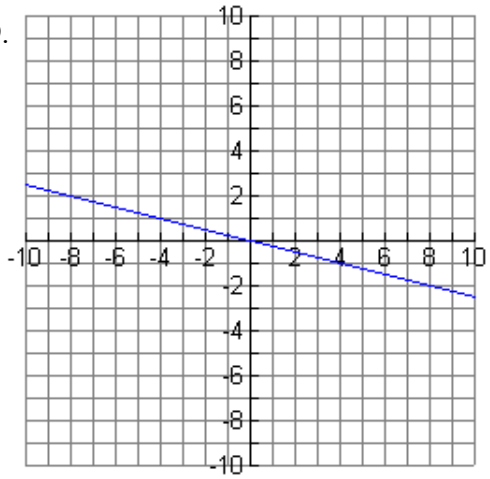
Rate of change _____

38.



Rate of change _____

39.



Rate of change _____