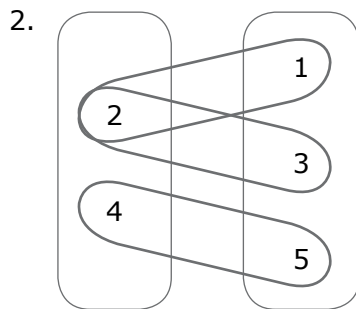
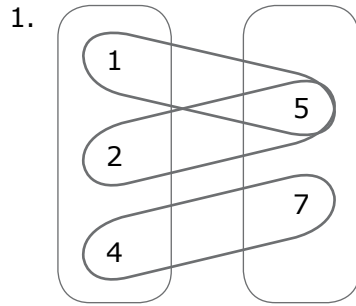


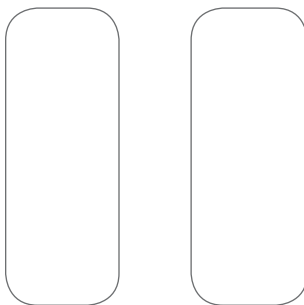
Relations and the Coordinate Plane

Write the relation as a list of ordered pairs for each mapping diagram.
Is the relation a function or not a function?

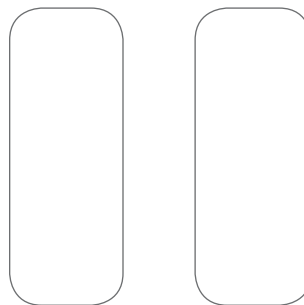


Create a mapping diagram for each relation.

3. $((1, 2), (3, 7), (4, 7))$



4. $((0, 0), (1, 1), (2, 2), (3, 3))$



Identify the location of each of the following points on the coordinate plane. Is the point located in quadrant I, II, III, IV, on the x-axis, or on the y-axis?

5. $(-5, 7)$ _____ 6. $(-2, -1)$ _____

7. $(2, 0)$ _____ 8. $(1, 8)$ _____

9. $(0, -4)$ _____ 10. $(4, -6)$ _____

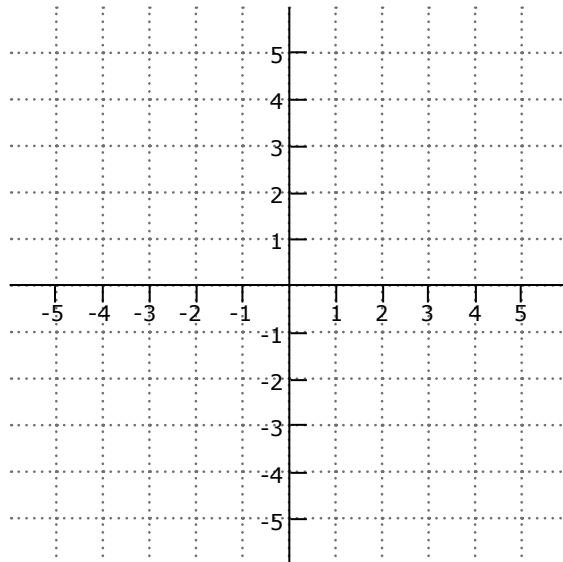
For the following, assume a and b are positive numbers. State the quadrant in which each point lies.

11. (a, b) _____ 12. $(-a, b)$ _____

13. $(-a, -b)$ _____ 14. $(a, -b)$ _____

15. Graph and label each point on the coordinate plane.

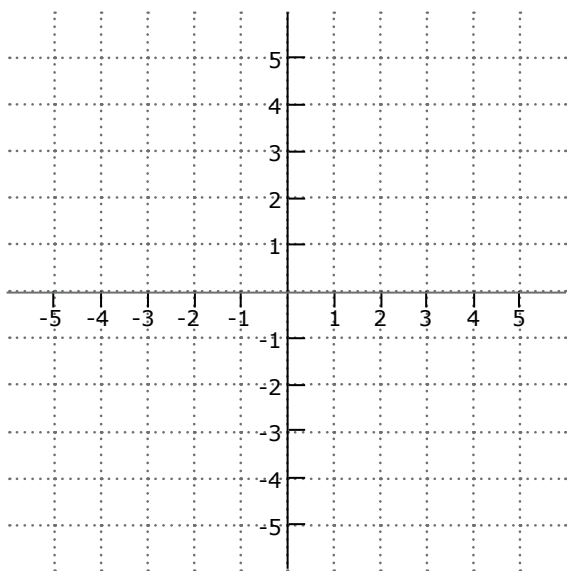
- A $(-5, 0)$
- B $(3, -1)$
- C $(1, 3)$
- D $(-2, 3)$
- E $(0, -4)$
- F $(-1, 4)$



Complete the table of values for each linear relation and graph the line for the values generated.

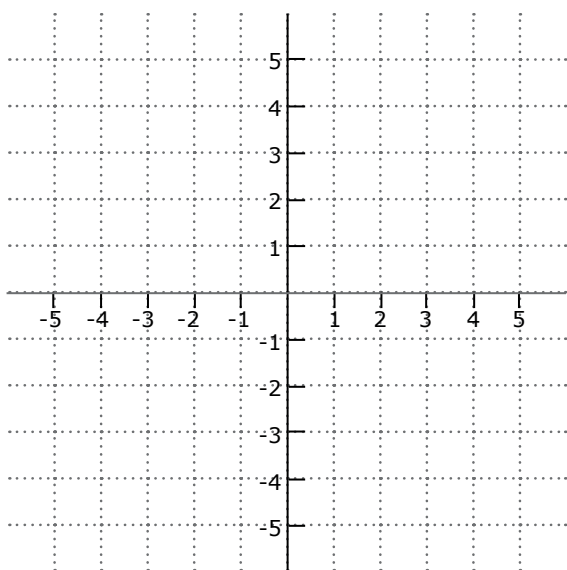
16. $y = \frac{1}{3}x - 4$

x	-3	0	3	6	9	12
y						



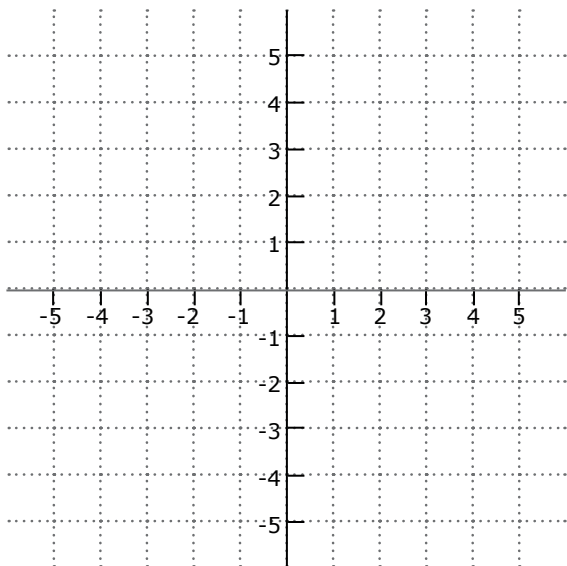
17. $y = -3x + 1$

x	-4	-2	0	2	4	6
y						



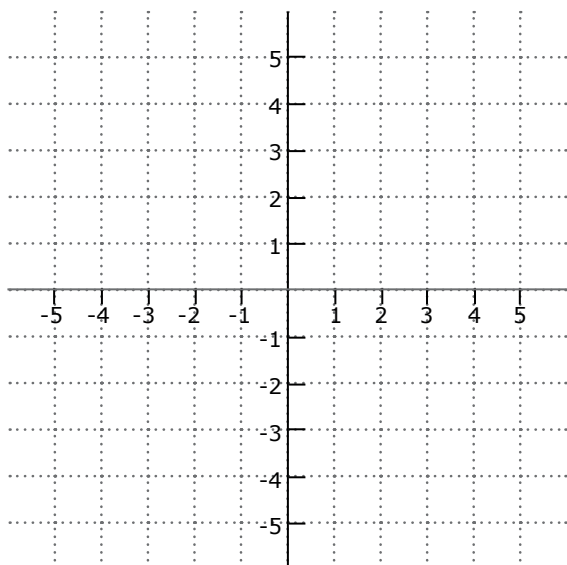
18. $y = \frac{1}{2}x$

x	-1	0	1	2	3	4
y						



19. $y = x - 2$

x	-1	0	1	2	3	4
y						



Complete the table of values for the following problems.

20. Lian is taking her friends on a road trip. Her car uses gasoline at a rate of about 2 gallons per hour. The car has a 16 gallon gas tank. The gallons of gas g in the car's tank can be modeled by the equation $g = 16 - 2t$ where t is the time (in hours).

Time (hrs)	0	1	3	4	5
Gallons					

21. Zachary can type at a rate of 60 words per minute.
If he types for 2 minutes he will type 120 words.

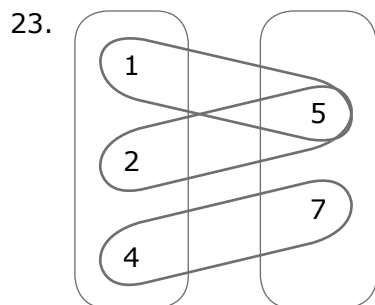
Time (hrs)	2	4	6	8	10	12
Words						

22. It takes Daksha one month to save \$120.
If he saves for 3 months, he will have saved \$360.

Months	2	4	6	8	10	12
\$ Saved						

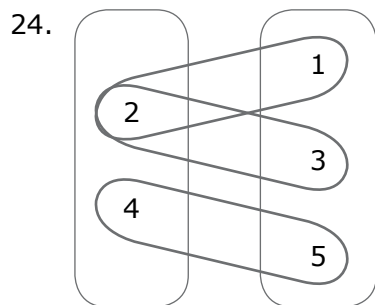
At the start of the workbook you did the following four questions. Now let's see if they are functions.

Write the relation as a list of ordered pairs for each mapping diagram.
Is the relation a function or not a function?



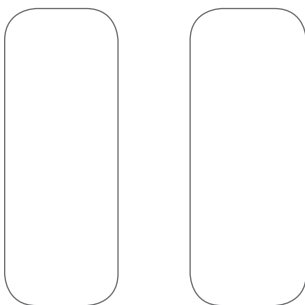
Relation?

Function?

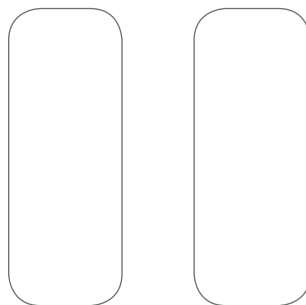


Create a mapping diagram for each relation.
Is the relation a function or not a function?

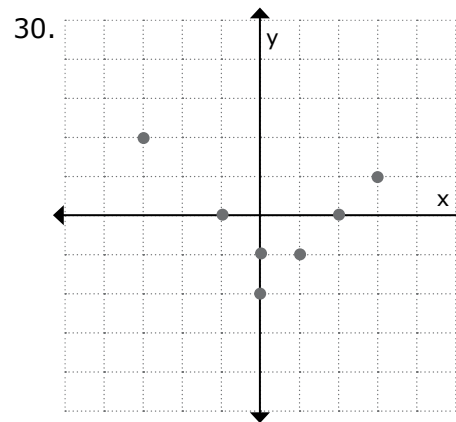
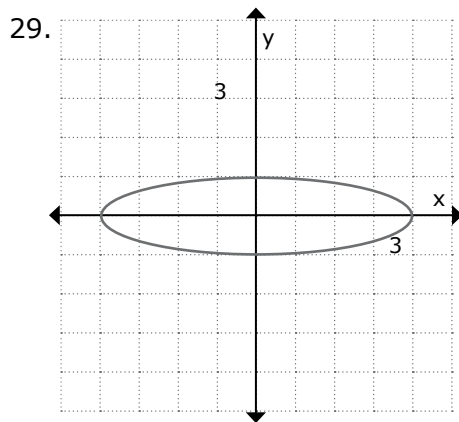
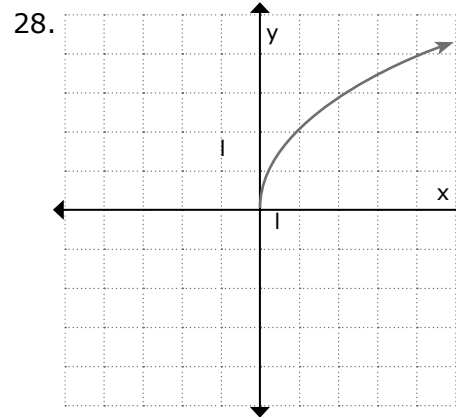
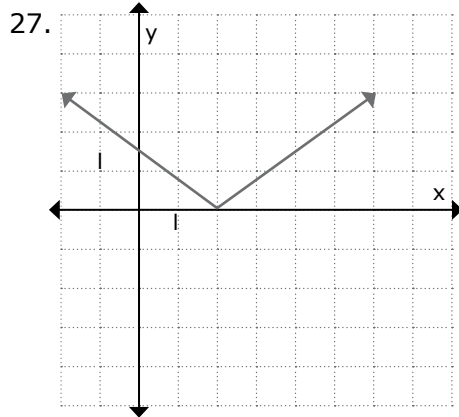
25. $((1, 2), (3, 7), (4, 7))$



26. $((0, 0), (1, 1), (2, 2), (3, 3))$

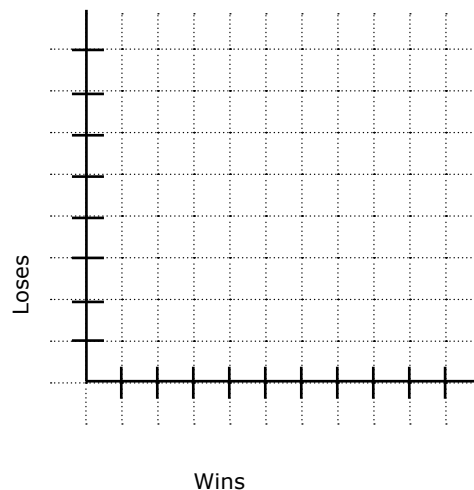


Determine if each of the following is a function or not using the vertical line test.



31. Graph the relation of the number of wins to number of losses.

NHL Northwest Division Standings as of Nov. 6, 2006		
Team	Wins	Losses
Minnesota	10	3
Colorado	7	5
Vancouver	7	7
Edmonton	7	6
Calgary	4	7



32. Is the number of losses a function of the number of wins?

33. Explain your answer to number 32:

34. Which of the following relations is not a function?

A.

x	2	3	4
y	1	1	1

B.

x	0	2	2
y	4	1	3

C.

x	7	5	3
y	7	5	3

D.

x	6	5	4
y	1	2	3

E.

x	1	2	4
y	4	0	3



Ships' Arcade Quiz

Reward Yourself!

Congratulations, you have completed another lesson and set of workbook questions and now it's time to reward yourself. The short multiple choice quiz below is based on the lesson that you just finished. Do the quiz and then go to www.pilotmath.com and enter the Ship's Arcade – this is where the Orbit High students go to play arcade games. Make sure you go into the Ship's Arcade through your present unit and that you choose the correct lesson from the dropdown menu. The secret code you will need to get into your game is the answers, in order, to the quiz questions. Have fun!

1. Use the information to answer the question.

x	1	2	3	4	5
y	2	6	10	14	18

For which equation is the information appropriate?

- (a) $y = 3x$
- (b) $y = \frac{x}{2} + 3$
- (c) $y = 4x - 2$
- (d) $y = 2x + 4$

2. Use the information to answer the question.

x	1	2	3	4	5
y	2	6	10	14	18

For which equation is the information appropriate?

- (a) $y = 3x + 3$
- (b) $y = 3x - 2$
- (c) $y = 2x - 6$
- (d) $y = -2x + 8$

3. Use the information to answer the question.

Two cells in the table below have been filled in for you. According to the formula: $\text{speed} = \frac{\text{distance}}{\text{time}}$, what is the value for the empty cell?

Distance (km)	Speed (km/hr)	Time (h)
255		2.5

- (a) 637.5
(b) 150
(c) 102
(d) 100
4. Use the information below to answer the question.

Time (t)	0	1	2	3	4	5
Distance (d)	0	80	160	240	320	400

Which formula relates distance and time in the chart?

- (a) $d = t + 80$
(b) $d = 80t$
(c) $t = 80d$
(d) $d = \frac{80}{t}$
5. Use the information to answer the question.

x	0	1	2	3	4
y	4	3	2	1	0

Which equation relates y to x in the chart?

- (a) $y = -x + 4$
(b) $x = y + 4$
(c) $y = 3x$
(d) $y = \frac{x}{4}$

