

## Chapter 2 Review

Name Key

Define each term in your own words.

- sequence *pattern, an ordered arrangement of numbers, geometric figures, letters, or other objects.*
- term *individual number, letter, or figure in a sequence.*
- ellipsis *... and so on*

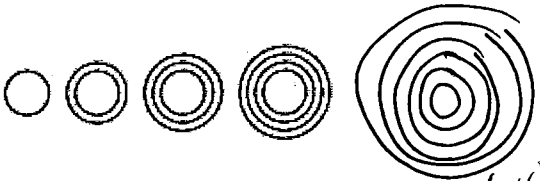
Write or draw the term requested for each given sequence.

4. 3, 6, 9, 12, 15, ...  
What is the next term?

*18*

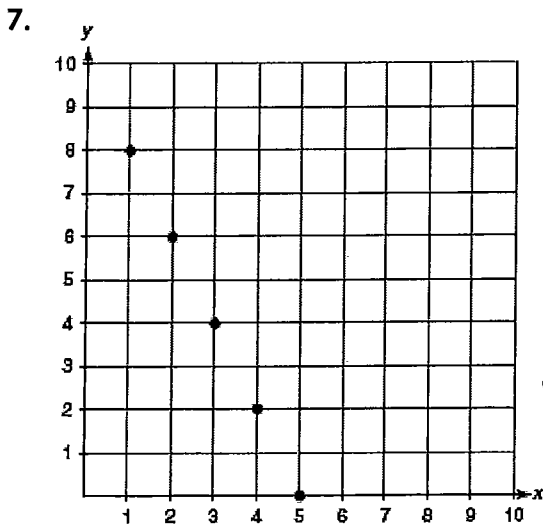
5. Z, Y, X, W, V, U, ...  
What is the tenth term?

*Q*

- 6.
- 
- What is the sixth term?

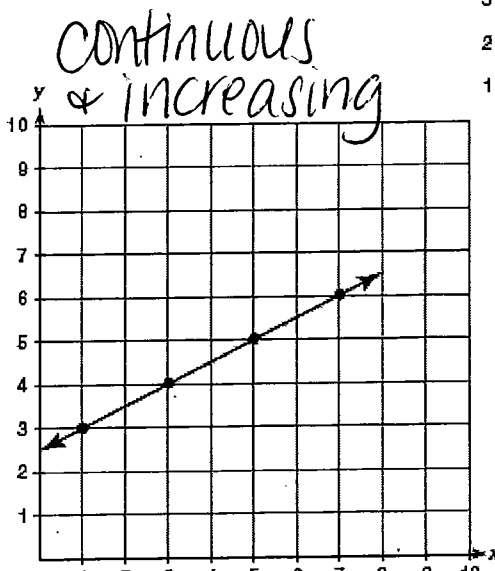
*brings*

Tell whether each graph is discrete or continuous. Also, tell whether each graph is increasing, decreasing, both, or neither.

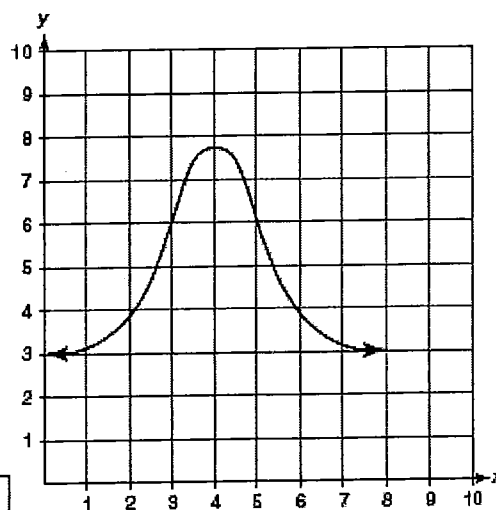


*discrete & decreasing*

9.



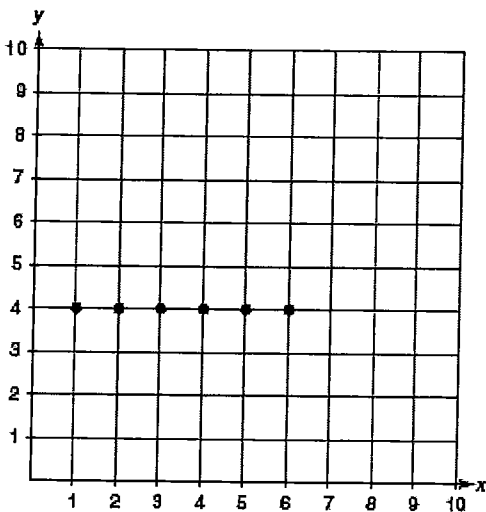
8.



*continuous, increasing & decreasing*

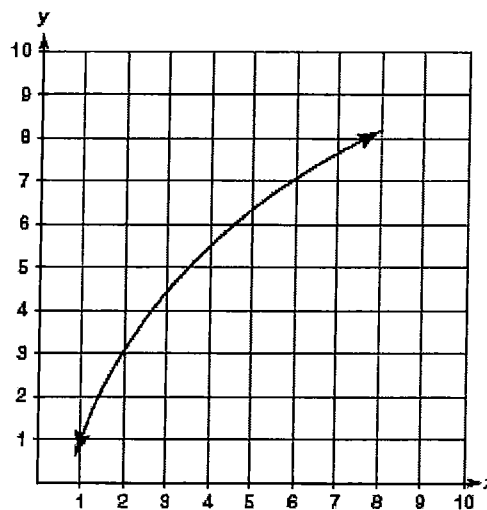
Tell whether each graph is linear or nonlinear. Also, tell whether each graph is increasing, decreasing, both, or neither.

10.



linear  
neither

11.



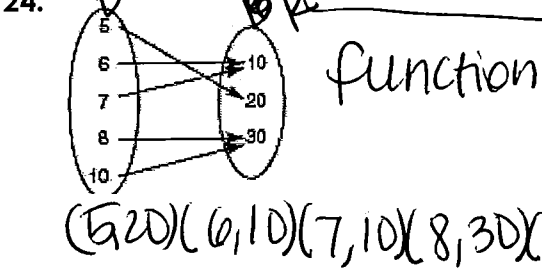
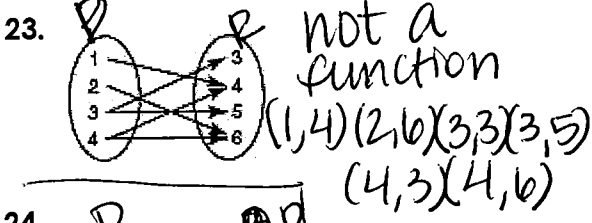
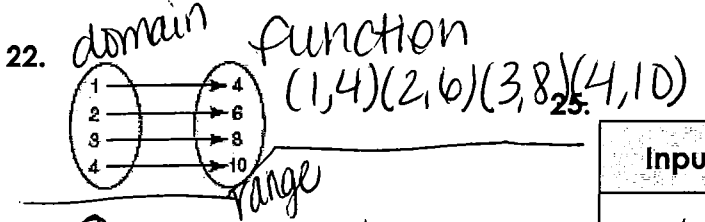
non-linear &  
increasing

Write the term from the box that best completes each sentence.

|              |          |          |       |               |      |         |     |        |
|--------------|----------|----------|-------|---------------|------|---------|-----|--------|
| scatter plot | output   | relation | input | vertical line | test | mapping | set | domain |
| range        | function |          |       |               |      |         |     |        |

12. A(n) relation relation is any set of ordered pairs or the mapping between a set of inputs and a set of outputs.
13. The first coordinate of an ordered pair in a relation is the input.
14. The second coordinate of an ordered pair is the output.
15. A(n) function maps each input to one and only one output.
16. A(n) scatter plot is a graph of a collection of ordered pairs.
17. The vertical line test is a visual method of determining whether a relation represented as a graph is a function by visualizing whether any vertical lines would intersect the graph of the relation at more than one point or not.
18. A(n) mapping shows objects in two sets connected together to represent a relationship between the two sets.
19. A(n) Set is a collection of numbers, geometric figures, letters, or other objects that have some characteristic in common.
20. The domain of a function is the set of all inputs of the function.
21. The range of a function is the set of all outputs of the function.

Write the corresponding ordered pairs for each relation. Tell whether each relation is a function. Determine the domain and range for each relation.



| Input | Output |
|-------|--------|
| 4     | 8      |
| 8     | 12     |
| 12    | 16     |
| 16    | 20     |
| 20    | 24     |

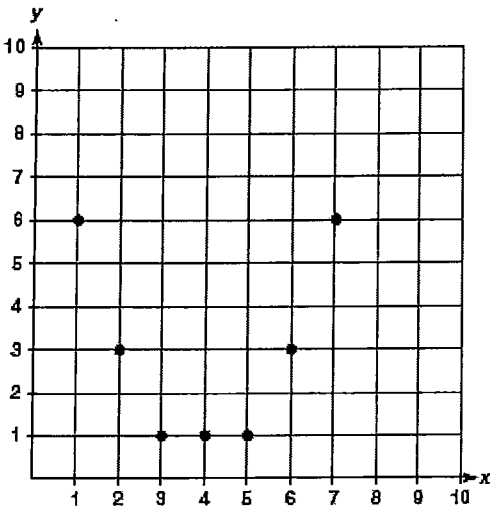
26. not a function

| D     | R      |
|-------|--------|
| Input | Output |
| 15    | 0      |
| 10    | 5      |
| 5     | 10     |
| 10    | 15     |
| 15    | 20     |

(4,8)(8,12)(12,16)(16,20)(20,24) | (15,0)(10,5)(5,10)(10,15)(15,20)

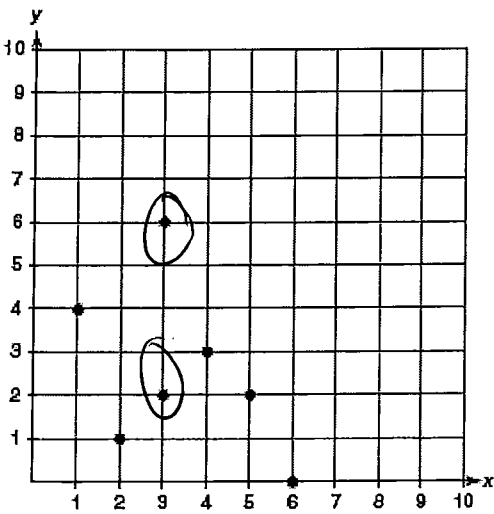
Determine whether each graph represents a function. Use the vertical line test, if necessary.

27.



function

28.

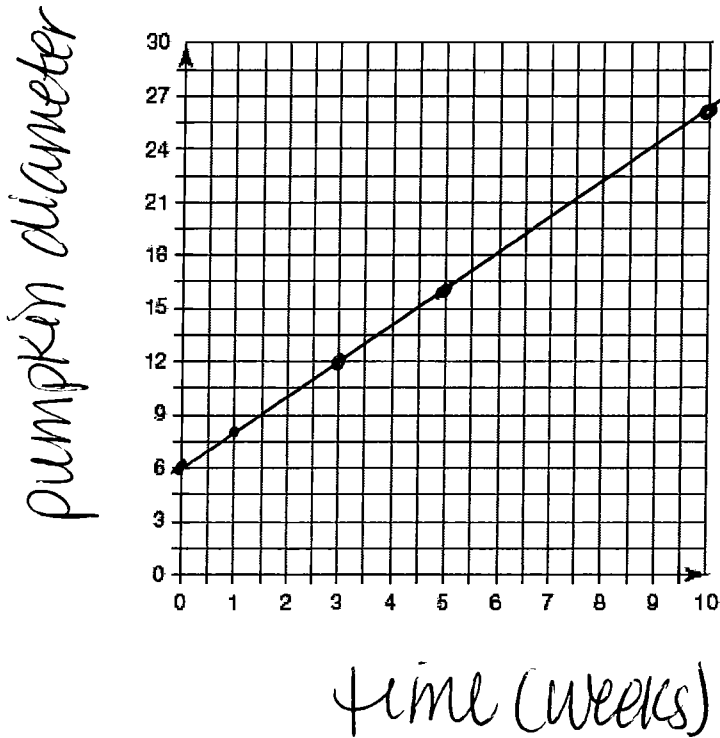


not a function

Complete the table and create a graph for each given problem situation. In the "Expression" row of the table, write a variable to represent the independent quantity in the first column and write an expression to represent the dependent quantity in terms of the independent quantity in the second column.

30 Horace begins measuring the diameter of a pumpkin in his pumpkin patch when it has a diameter of 6 inches. After he measures the pumpkin, its diameter begins to increase at a rate of 2 inches per week.

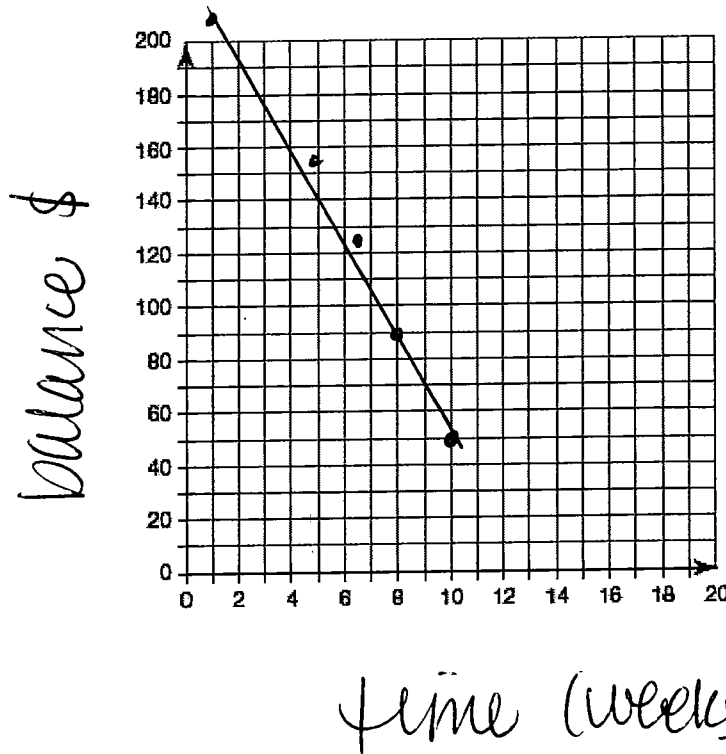
|                 | Independent Quantity | Dependent Quantity |
|-----------------|----------------------|--------------------|
| Quantity Name   | time                 | diameter           |
| Unit of Measure | weeks                | inches             |
|                 | 0                    | 6                  |
|                 | 1                    | 8                  |
|                 | 3                    | 12                 |
|                 | 5                    | 16                 |
|                 | 10                   | 26                 |
| Expression      | $x$                  | $2x + 6$           |



31. Carl initially had \$250 in his savings account. Each week he withdraws \$20.

|                 | Independent Quantity | Dependent Quantity |
|-----------------|----------------------|--------------------|
| Quantity Name   | Time                 | Balance            |
| Unit of Measure | Weeks                | \$                 |
|                 | 1                    | 230                |
|                 | 4.75                 | 155                |
|                 | 6.25                 | 125                |
|                 | 8                    | 90                 |
|                 | 10                   | 50                 |
| Expression      | $X$                  | $250 - 20X$        |

Work  
↓



$$250 - 20X = 155$$

$$X = 4.75$$

$$250 - 20X = 125$$

$$X = 6.25$$

$$250 - 20X = 50$$

$$X = 10$$

Complete the table of values to model each problem situation.

1. You pay \$5 to enter a raffle, plus \$1 for each raffle ticket.

$$5 + 1x$$

| Number of Raffle Tickets Purchased | Total Cost (in dollars) |
|------------------------------------|-------------------------|
| 10                                 | \$15                    |
| 11                                 | 16                      |
| 12                                 | 17                      |
| 13                                 | 18                      |
| 14                                 | 19                      |
| 15                                 | 20                      |

2. Lauren has already read 55 pages of a novel. Each day, she reads another 30 pages.

| Number of Days | Number of Pages Read |
|----------------|----------------------|
| 2              | 115                  |
| 4              | 175                  |
| 6              | 235                  |
| 8              | 295                  |
| 10             | 355                  |
| 12             | 415                  |

$$55 + 30x$$

Use the given information to complete each table and answer the question.

On Big Country Dairy Farms, the average Holstein cow produces 40 pounds of milk daily in its first year of production and an additional 3 pounds of milk daily in each year after the first. The average Jersey cow produces 35 pounds of milk daily in its first year of production and an additional 4.5 pounds of milk daily in each year after the first. Complete the table to show each type of cows' daily milk production for the first 5 years. After 5 years, which type of cow produces the most milk daily?

1st yr: 40 then add 3 each yr.

1st: 35  
then  
add  
4.5

| Year | Holstein's Daily Milk Production (pounds) | Jersey's Daily Milk Production (pounds) |
|------|---|---|
| 1    | <del>40</del> 40                          | <del>39.50</del> 35                     |
| 2    | <del>43</del> 43                          | 39.50                                   |
| 3    | <del>46</del> 46                          | 44                                      |
| 4    | <del>49</del> 49                          | 48.50                                   |
| 5    | <del>52</del> 52                          | 53                                      |

35. Jerry puts a different type of fertilizer on each of his two pumpkin patches. A pumpkin from Patch A measures 13 ounces in week 1 and grows at a rate of 3.2 ounces per week. A pumpkin from Patch B measures 9 ounces in week 1 and grows at a rate of 3.6 ounces per week. Complete the table to show the growth for each pumpkin for 5 weeks. After 5 weeks, which pumpkin is the largest?

Start @ 13  
then add  
3.2

| Week | Weight of the Patch A Pumpkin (ounces) | Weight of the Patch B Pumpkin (ounces) |
|------|--|--|
| 1    | 13                                     | 9                                      |
| 2    | 16.20                                  | 12.60                                  |
| 3    | 19.40                                  | 16.20                                  |
| 4    | 22.60                                  | 19.80                                  |
| 5    | 25.80                                  | 23.40                                  |

Start @  
9  
then add  
3.6

Use the given equations to answer each question.

36. Two catering companies host children's sports banquets. Company A charges a fixed fee of \$100 plus \$3 per person. Company B charges a fixed fee of \$75 plus \$4 per person. The total charge for each company for any number of persons,  $p$ , can be calculated using the equations shown.

Company A:  $c = 3p + 100$

Company B:  $c = 4p + 75$

Which company would charge less to cater for 200 people?

A:  
 $3(200) + 100$

\$700

Company A

B:  
 $4(200) + 75$   
\$875

7. Lana is joining a gym. Get Fit charges \$20 per month, plus a \$99 initial set-up fee. Work It Out charges \$30 per month, plus a \$50 initial set-up fee. The equations show the total cost after any number of months,  $m$ .

Get Fit:  $c = 20m + 99$

Work It Out:  $c = 30m + 50$

Which gym would cost less if you planned on being a member for 4 months?

Get Fit  
 $20(4) + 99 = \$179$

Work It Out  
 $30(4) + 50 = \$170$

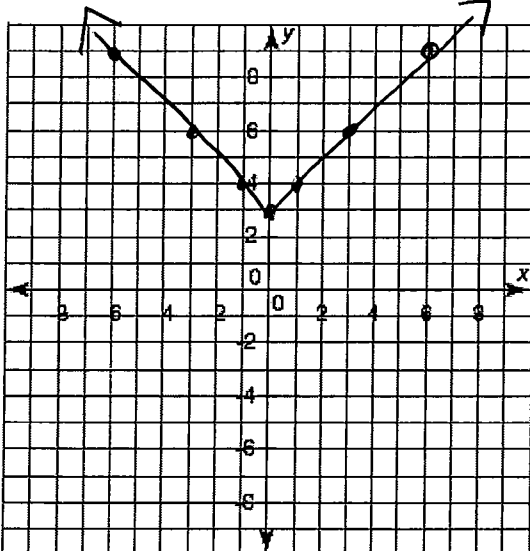
less for 4 mos.

Complete the table for each given function and use the values to graph the function.

9.  $y = |x| + 3$

absolute Value

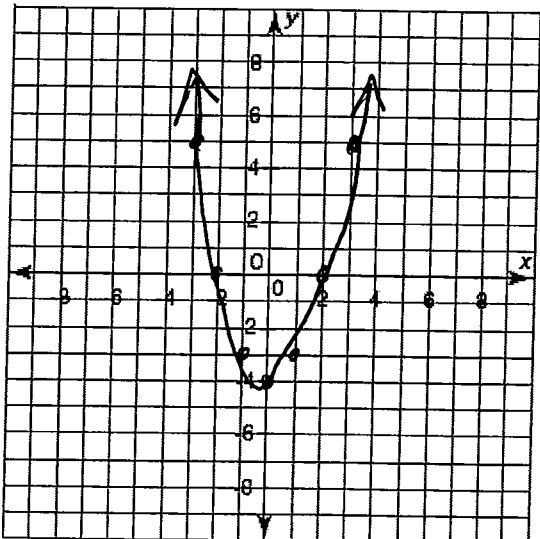
| x  | $y =  x  + 3$ |
|----|---------------|
| -6 | 9             |
| -3 | 6             |
| -1 | 4             |
| 0  | 3             |
| 1  | 4             |
| 3  | 6             |
| 6  | 9             |



39.  $y = x^2 - 4$

square

| x  | $y = x^2 - 4$ |
|----|---------------|
| -3 | 5             |
| -2 | 0             |
| -1 | -3            |
| 0  | -4            |
| 1  | -3            |
| 2  | 0             |
| 3  | 5             |



10.  $y = 2|x|$

| x  | $y = 2 x $ |
|----|------------|
| -5 | 10         |
| -3 | 6          |
| -1 | 2          |
| 0  | 0          |
| 1  | 2          |
| 2  | 4          |
| 4  | 8          |

