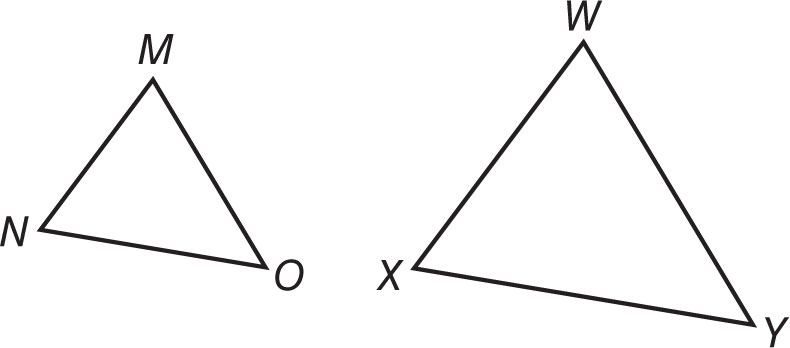
**Course 3 Benchmark Test – End of Year**

**1.** The area of a figure is 64 square centimeters. Suppose the sides of the figure are doubled. What will be the new area of the similar figure?

**2.** Triangle *MNO* is similar to triangle *WXY*. Which of the following statements is not necessarily true?



**4.** A marching band has 64 members. The band director wants to arrange the band members into a square formation. How many band members will be in each row?

**5.** Between which two integers does lie on the number line?

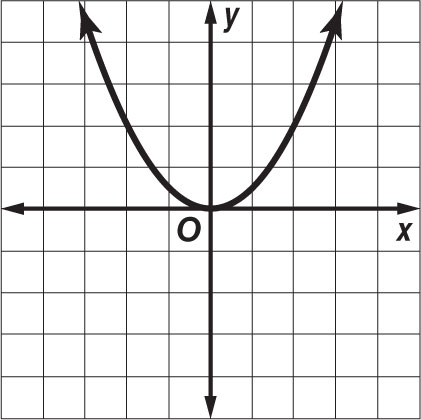


**6.** What are the slope and *y*-intercept of the linear equation below?

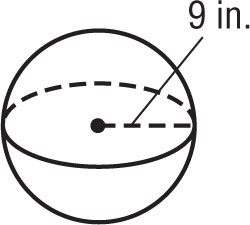
*y* = *x* – 1

**Course 3 Benchmark Test – End of Year** *(continued)*

**7.** What is the equation of the quadratic function shown in the graph?



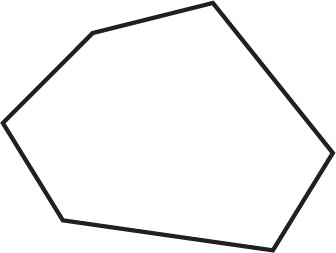
**8.** What is the volume of a sphere with a radius of 9 inches?



**9.** What are the *x*- and *y*-intercepts of the linear equation below?

–5*x* + 3*y* = –15

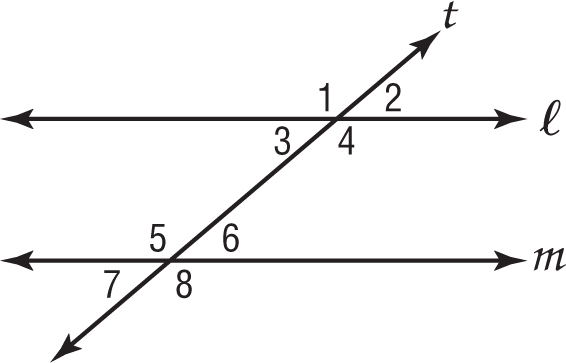
**11.** What is the sum of the measures of the interior angles of a hexagon?



**Course 3 Benchmark Test – End of Year** *(continued)*

**13.** A soup can has a diameter of 8 centimeters and a height of 15 centimeters. About how much soup does the can hold? Use 3.14 for π. Round to the nearest tenth.

**15.** Parallel lines *l* and *m* are intersected by transversal *t* as shown below. Which of the following angles are alternate interior angles?

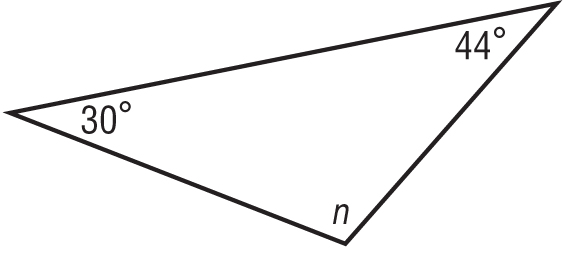


**16.** What is the distance between points

*L*(−5, 7) and *M*(3, −8)?

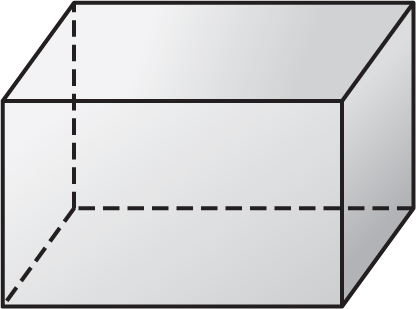
**17.** The slope of a line is −3 and the *y*-intercept is (0, 4). What is the equation of the line in slope-intercept form?

**18.** What is the value of *n* in the triangle below?

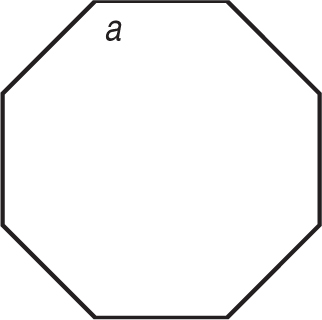


**Course 3 Benchmark Test – End of Year** *(continued)*

**19.** Suppose the dimensions of a rectangular prism are enlarged by a factor of 3. By what scale factor will the volume of the prism be scaled?



**20.** What is the measure of an interior angle of a regular octagon?

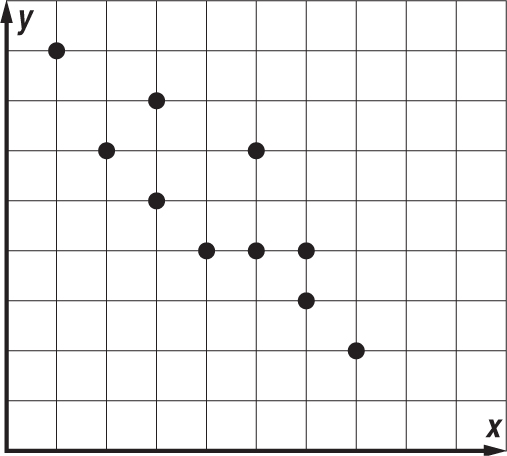


**22.** Which equation is equivalent to 3*x* + 2*y* = –2?

**23.** Which of the following symbols when placed in the blank results in a true number sentence?

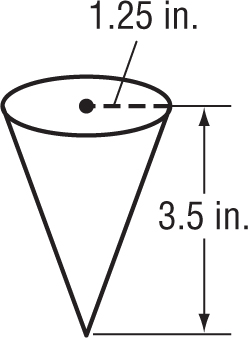
1.7\_\_\_\_\_\_

**24.** What type of relationship is shown in the scatter plot below?



**Course 3 Benchmark Test – End of Year** *(continued)*

**25.** About how much water can the paper drinking cup shown below hold? Use 3.14 for π. Round to the nearest tenth.

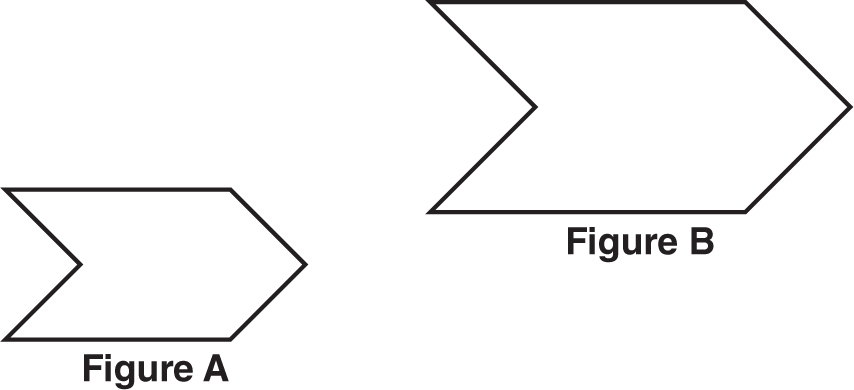


**27.** Which two points form a line that has a slope of ?

**28.** What is the constant rate of change of the function represented in the table below?

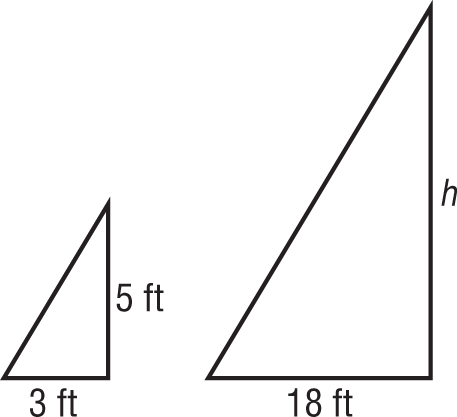
|  |  |
| --- | --- |
| ***x*** | ***y*** |
| –6 | –7 |
| –3 | –1 |
| 0 | 5 |
| 3 | 11 |

**30.** Which transformations could have been used to map Figure A onto Figure B?



**Course 3 Benchmark Test – End of Year** *(continued)*

**31.** Katie is 5 feet tall. She casts a 3-foot long shadow at the same time that a flagpole casts an 18-foot long shadow.



What is the height of the flagpole?

**32.** What is the approximate surface area of a cylinder with a height of 12 meters and a base radius of   
2 meters? Use 3.14 for π. Round to the nearest tenth if necessary.

**33.** The distance from the Sun to Venus is about   
1.08 × 1011 meters. If light travels at a speed of   
3 × 108 meters per second, about how long does it take light from the sun to reach Venus?

**34.** Which of the following is equivalent to 2–4?

**35.** What is the range of the function shown in the table?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***x*** | –7 | –5 | –3 | –1 | 1 |
| ***y*** | 4 | 6 | 1 | –2 | –3 |

**37.** A cone has a height of 24 inches, a slant height of   
25 inches, and a diameter of 14 inches. What is the surface area of the cone?

**Course 3 Benchmark Test – End of Year** *(continued)*

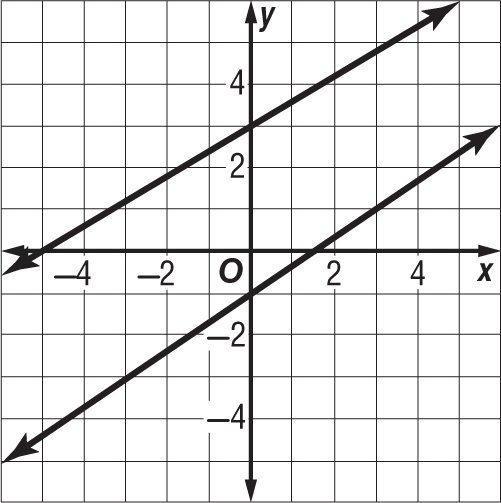
**38.** A hotel shuttle service charges $7.50 plus $0.85 per mile. A customer hires a shuttle, and the total charge is $12.60. Which equation can be used to determine the number of miles from the hotel to the airport?

**40.** The population of the United States is about   
3.1 × people. What is this number written in standard form?

**41.** Which expression is equivalent to the expression below?

*c* • *c* • *c* • *c* • *d* • *d* • *c* • *d* • *c* • *c* • *d*

**42.** What is the solution to the system of linear equations shown below?



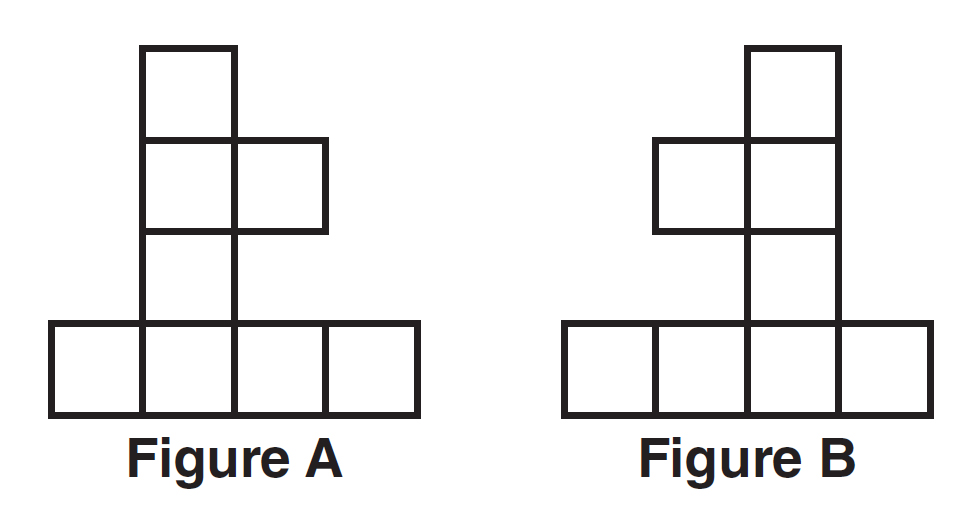
**43.** Jasmine determines figure *ABCD* ≅ figure *FGHI*. If *AB* = 14 meters, *BC* = 11 meters, *CD* = 9 meters, and *AD* = 17 meters, what is the length of ?

**Course 3 Benchmark Test – End of Year** *(continued)*

**45.** What is the slope of the line that passes through points *R*(0, 2) and *T*(–3, –4)?

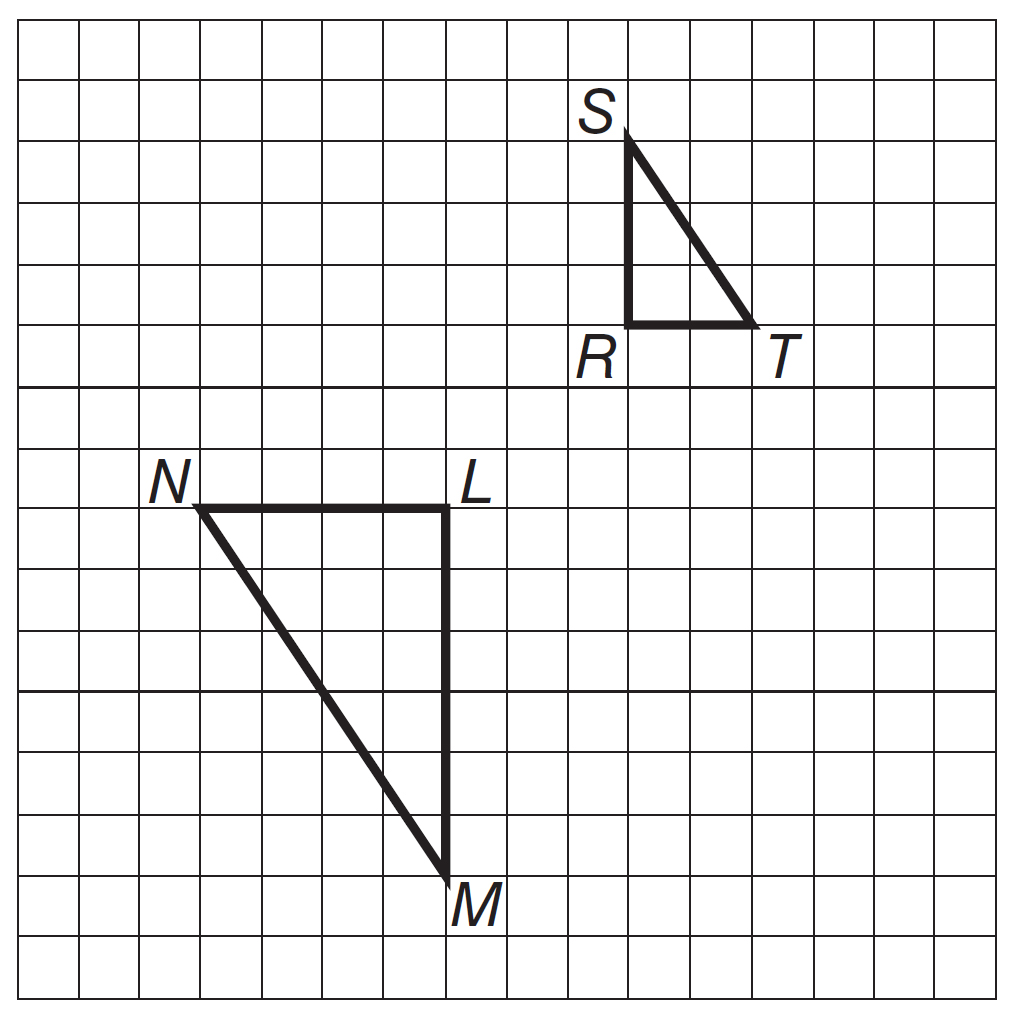
**46.** Robert has $220 in his savings account. He plans to save an additional $15 each month. Which function can Robert use to determine how much he will have saved *s* after *m* months?

**47.** What type of transformation is represented by the figures below?



**48.** Which of the following equations represents a vertical line?

**49.** Which series of transformations can be used to prove that triangle *RST* is similar to triangle *LMN*?

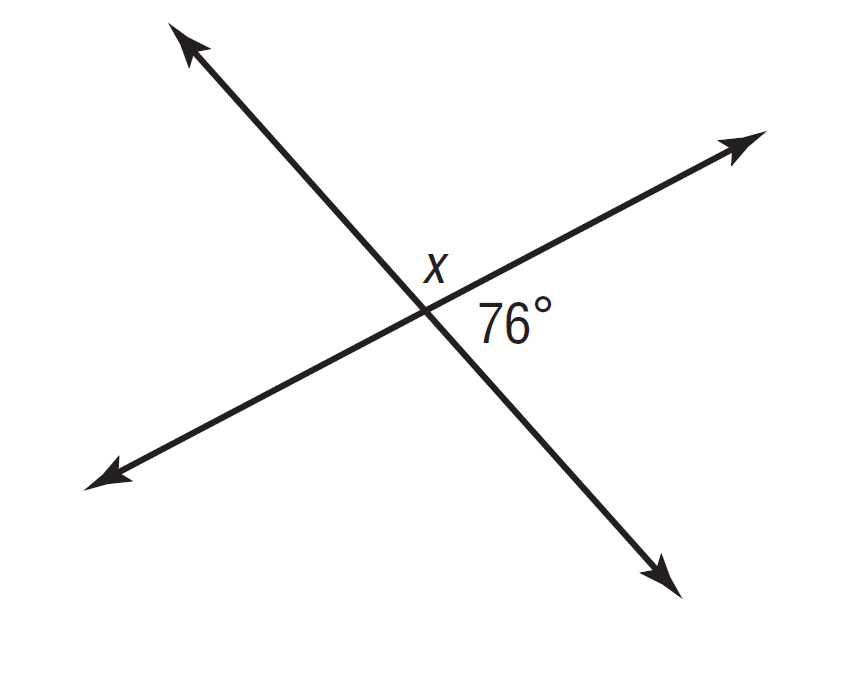


**Course 3 Benchmark Test – End of Year** *(continued)*

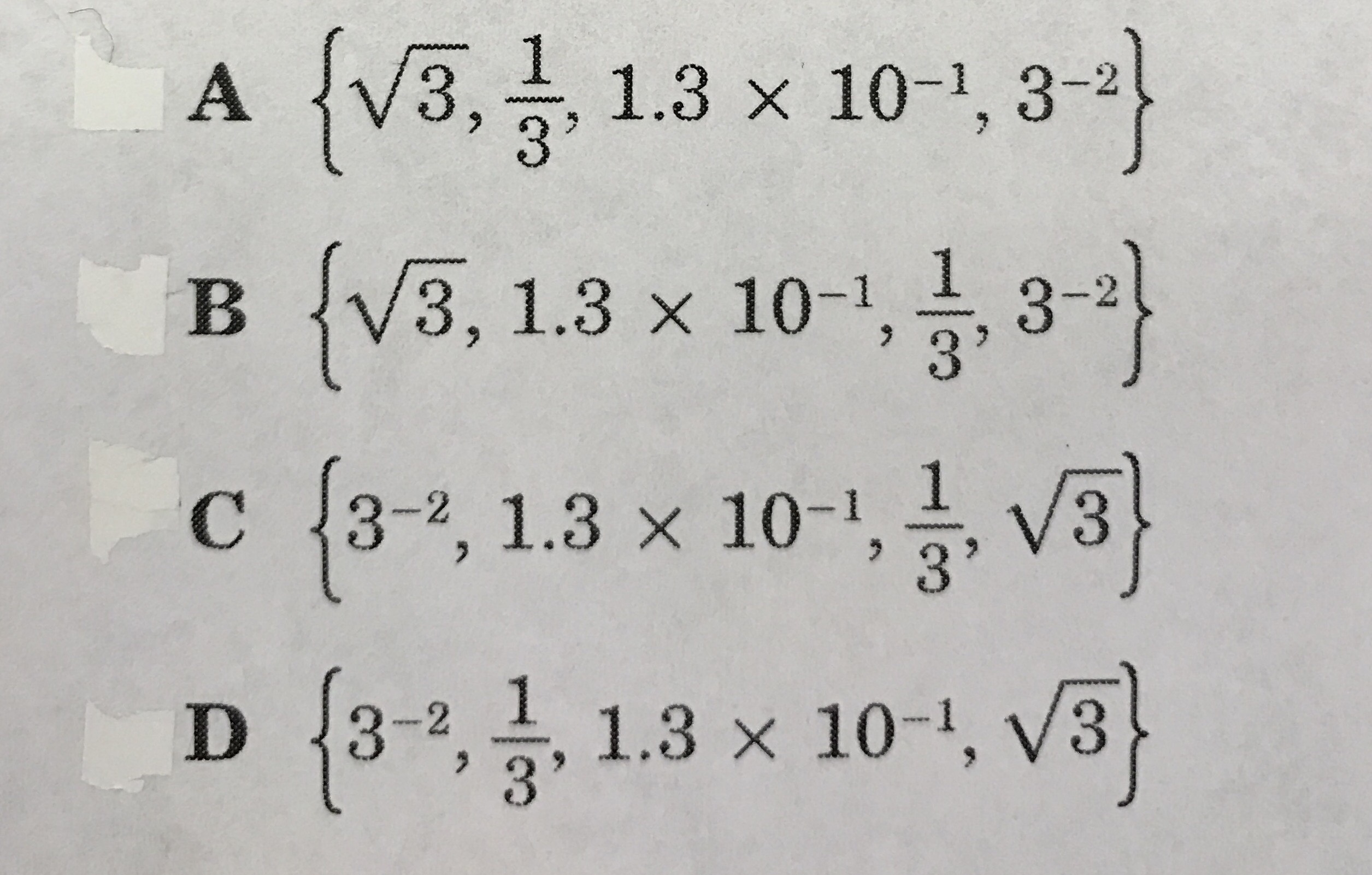
**50.** Which of the following statements about a line of best fit is *not* true?

**51.** The endpoints of are *A*(8, –2) and *R*(–4, 1). What is the length of ? Round to the nearest tenth.

**52.** What is the value of *x* in the figure below?



**54.** Which set lists the values below from least to greatest?



, , 1.3 × ,

**56.** What is the value of *v* in the equation below?

*3(2v + 1) = -15(5v + 16)*

**57.** What is the solution to the equation below?

0.4*p* + 0.1 = 1.15

**Course 3 Benchmark Test – End of Year** *(continued)*

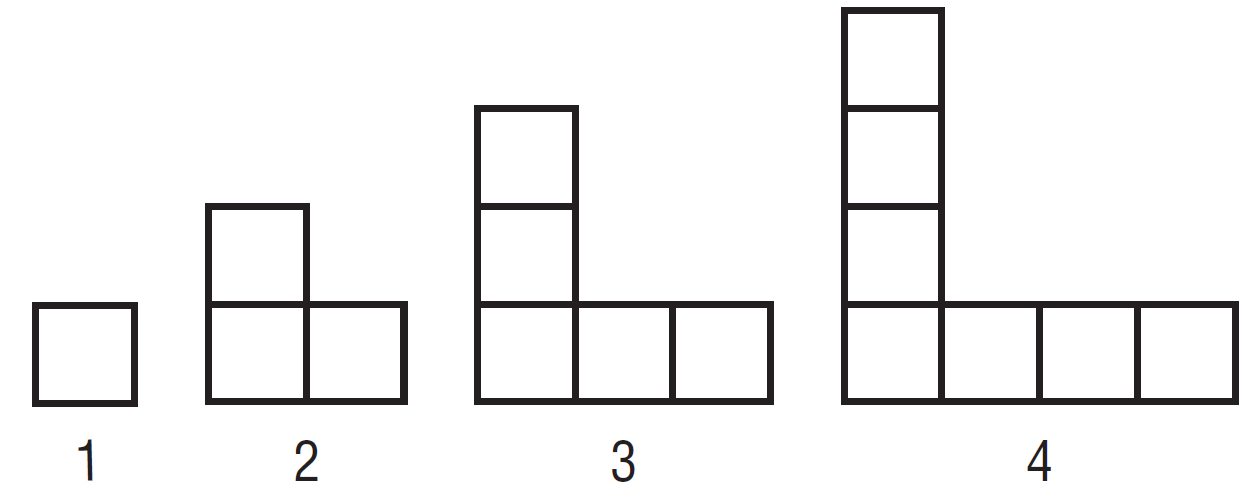
**58.** Solve the system of equations below.

7*x* + 6*y* = −10

–2*x* + *y* = 11

**59.** The quadratic function *h*(*t*) = –16 + 90 represents the height, in feet, of an object *t* seconds after it begins falling from a height of 90 feet. What is the height of the object after 2 seconds?

**60.** Let *n* represent the figure number in the pattern below.

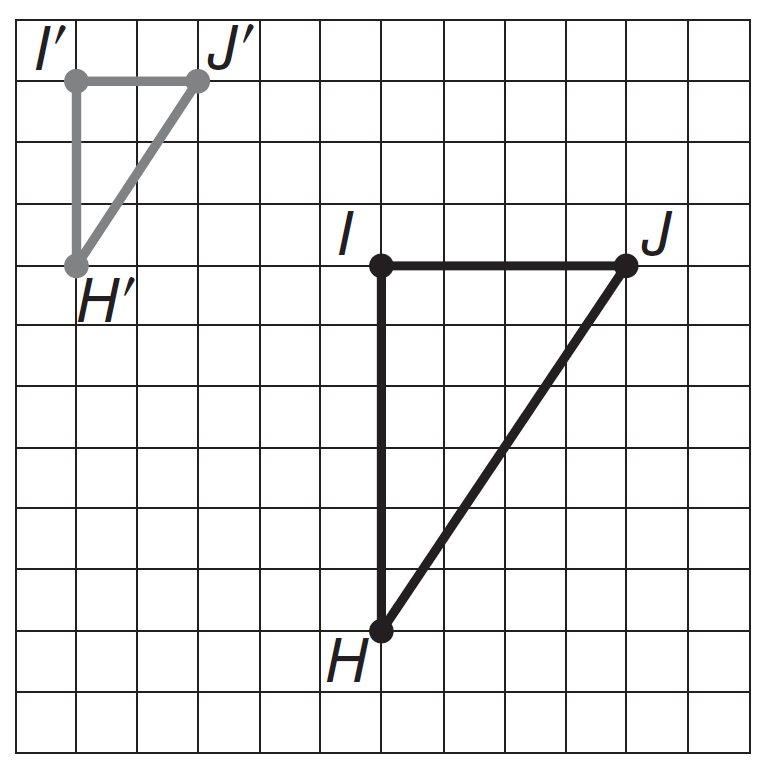


Which function represents the number of squares used to create each figure?

**61.** By what factor would you need to multiply the dimensions of a polygon in order for the resulting image to have a perimeter that is equal to 4 the original perimeter?

**62.** A rectangular-shaped school courtyard has a length of 280 feet and a width of 150 feet wide. What is the approximate length of a diagonal of the courtyard to the nearest tenth?

**64.** What is the scale factor of the dilated figure shown below?



**65.** Point *A*(–7, –3) is reflected across the *y*-axis. What are the coordinates of the image?