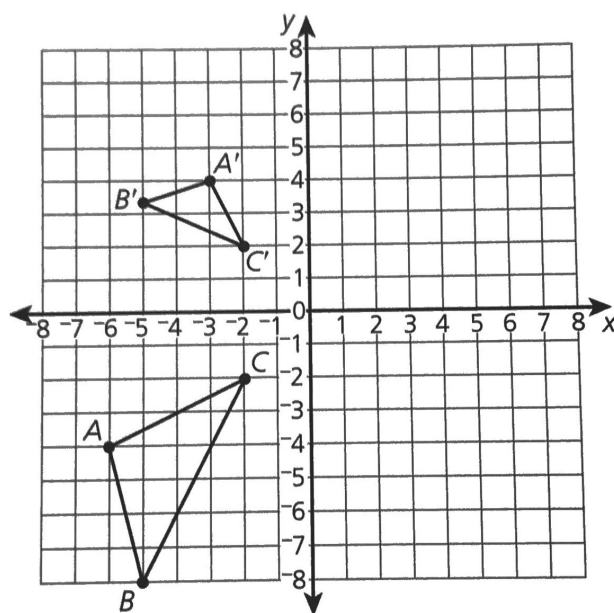


- 31 Which ordered pair represents the solution to this system of equations?

$$\begin{cases} y = \frac{2}{3}x + 3 \\ x + 3y = 0 \end{cases}$$

- (A) (0, 0)
- (B) (0, -3)
- (C) (-3, 1)
- (D) (3, 5)

- 32 The coordinate plane below shows similar triangles ABC and $A'B'C'$.

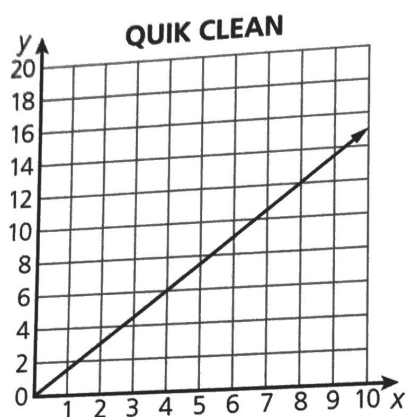


Which sequence of transformations proves the similarity between the two triangles?

- (A) Rotate $\triangle ABC$ 90° counterclockwise and dilate it by a scale factor of 2 centered at point C.
- (B) Rotate $\triangle ABC$ 90° clockwise and dilate it by a scale factor of $\frac{1}{2}$ centered at point C.
- (C) Rotate $\triangle ABC$ 90° counterclockwise and dilate it by a scale factor of $\frac{1}{2}$ centered at the origin.
- (D) Rotate $\triangle ABC$ 90° clockwise and dilate it by a scale factor of 2 centered at the origin.

33

The graph and the table below show the relationship between y , the total cost, and x , the number of loads washed, at two laundromats.



SUDSY SOLUTIONS

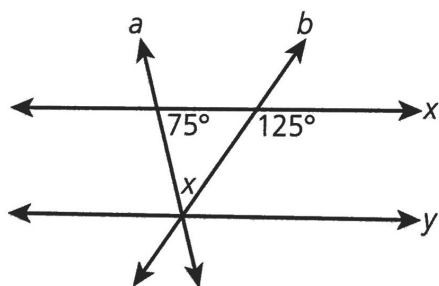
x	y
2	2.5
4	5
6	7.5
8	10
10	12.5

How much more will it cost to wash 12 loads of laundry at Quik Clean than at Sudsy Solutions?

- (A) \$0.25
- (B) \$2.50
- (C) \$3.00
- (D) \$9.00

34

Look at the diagram below.

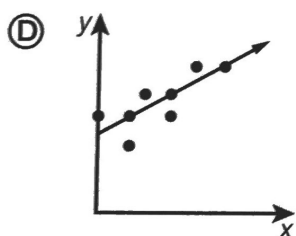
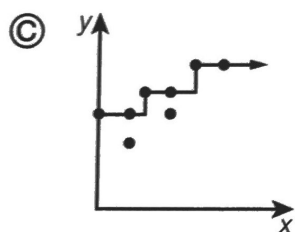
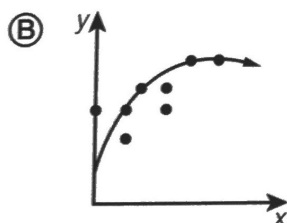
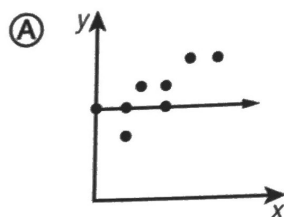


What is the measure of the angle marked x ?

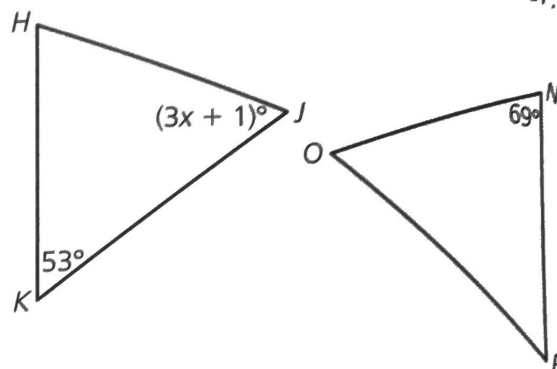
- (A) 50°
- (B) 55°
- (C) 75°
- (D) 125°

Directions: Read each problem. Then fill in the circle of the best answer.

- 35 Which scatter plot shows a line that best models the relationship between x and y ?



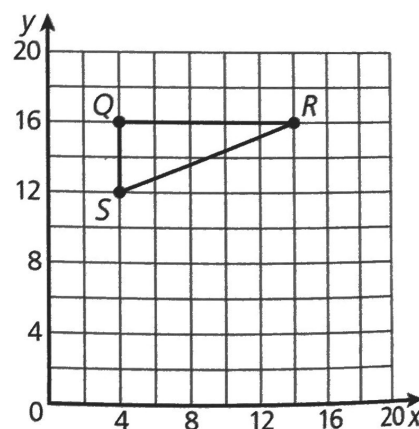
- 36 Triangle HJK is congruent to triangle NOP .



What must be the value of x ?

- (A) 18
(B) 19
(C) 21
(D) 23

- 37 Triangle QRS will be dilated by a factor of $\frac{5}{2}$ to form its image, triangle $Q'R'S'$.



What will be the length, in units, of line segment $\overline{Q'R'}$?

- (A) 4 units
(B) 5 units
(C) 10 units
(D) 25 units

- 38 Figures P and Q are shown below.

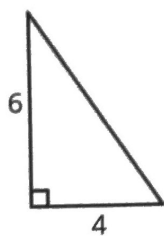


Figure P

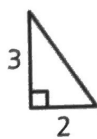
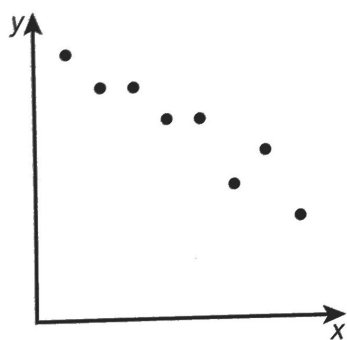


Figure Q

Are figures P and Q similar?

- (A) Yes, because both figures are right triangles.
- (B) No, because figure P is not the same size as figure Q .
- (C) Yes, because figure P is two times greater than figure Q .
- (D) No, because one side length is unknown on both figures.

- 39 Which statement best describes the data on this scatter plot?



- (A) It is linear because the points follow a general straight direction.
- (B) It is nonlinear because the points follow in a downward direction.
- (C) It is linear because each x -value corresponds to exactly one y -value.
- (D) It is nonlinear because each x -value corresponds to a different y -value.

- 40 Mr. Cooper wants to lengthen each side of a square animal pen by the same length. The equation below represents the perimeter p , in feet, of the animal pen when Mr. Cooper lengthens each side by s feet.

$$p = 4(s + 6)$$

By how many feet should Mr. Cooper lengthen each side so that the larger animal pen has a perimeter of 68 feet?

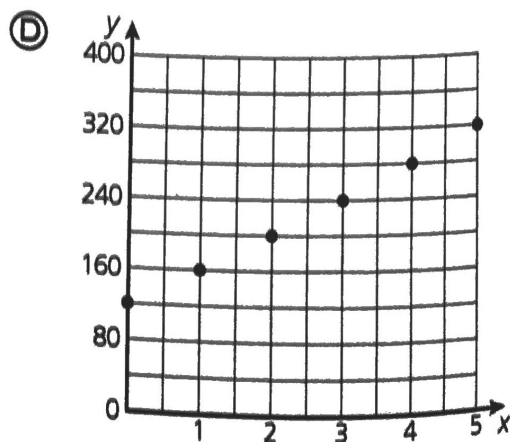
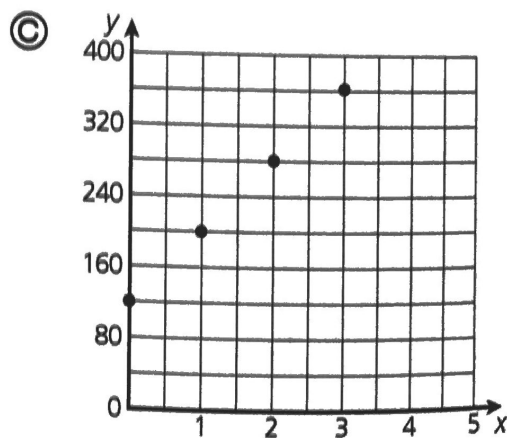
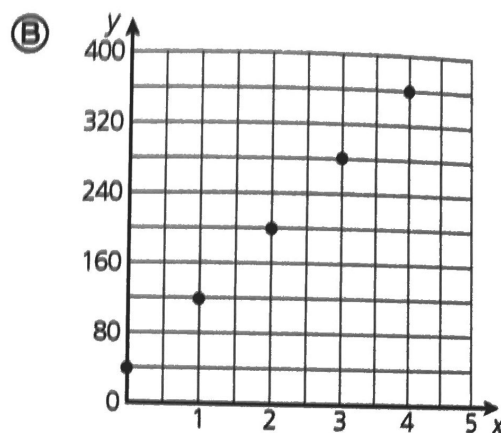
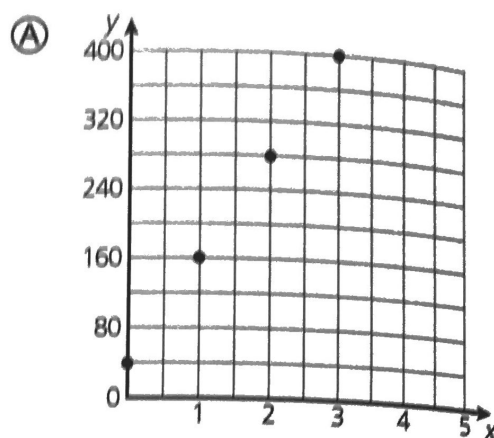
- (A) 11 feet
- (B) 14.5 feet
- (C) 15.5 feet
- (D) 23 feet

- 41 Find the value of the expression below.

$$\left(\frac{(4^3)(4^4)}{4^6}\right)^{-2}$$

- (A) 256
- (B) 16
- (C) $\frac{1}{16}$
- (D) $\frac{1}{256}$

- 42 Jorge's cellphone cost \$120. His monthly plan costs \$40. Which graph shows Jorge's total cost, y , in dollars, for the cellphone for x months?



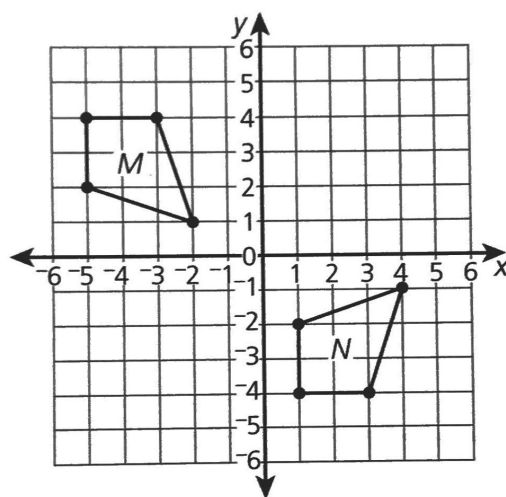
43

Parallelogram $WXYZ$ is rotated 90° clockwise around the origin to form its image, $W'X'Y'Z'$. Which of the following statements must be true?

- (A) Side $X'Y'$ is parallel to side $W'Z'$.
- (B) Side $W'X'$ is parallel to side $X'Y'$.
- (C) Side $Y'Z'$ is parallel to side YZ .
- (D) Side $W'Z'$ is parallel to side XY .

44

Figures M and N are shown below.



Which set of transformations on figure M could be used to prove it is congruent to figure N ?

- (A) rotate 180° clockwise around the origin and translate 2 units right
- (B) rotate 90° clockwise around the origin and reflect across the x -axis
- (C) reflect across the x -axis and translate 6 units right
- (D) reflect across the y -axis and translate 3 units down

Last year, Irene opened a bank account with an initial deposit of \$250. At the end of each month, she deposited the same dollar amount to the account, as shown in the table below.

IRENE'S BANK ACCOUNT

End of Month (m)	Total Dollar Amount in Account (d)
1	290
2	330
3	370
4	410

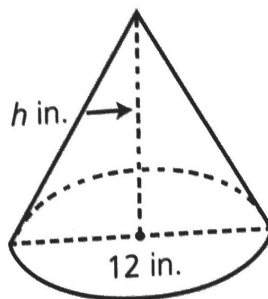
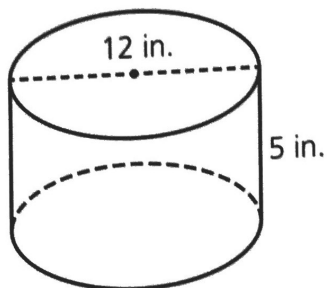
Part A: How much money did Irene deposit to the account at the end of each month?

Answer: \$_____

Part B: Write an equation that can be used to determine d , the total dollar amount deposited into Irene's bank account after m months.

Answer: _____

- 73** The cylinder and cone shown below have the same volume.



Part A: What is the volume, in cubic inches, of the cylinder? Give your answer in terms of π .

Answer: _____ cubic inches

Part B: What is the height, h , in inches, of the cone? Give your answer in terms of π .

Show your work.

Answer: _____ inches

76

Reliable Car Rental charges customers who rent a car a base rate plus a per-mile rate for the number of miles they drive the car. The table below models the rates charged by Reliable Car Rental.

RELIABLE CAR RENTAL RATES	
Distance Driven (miles)	Total Cost (dollars)
50	120
100	160
150	200
200	240

Part A: What is the total cost to rent a car from Reliable Car Rental if the car is driven 250 miles?

Answer: \$_____

Apex Car Rental charges a base rate of \$150 and a per-mile rate of \$0.60 per mile to rent a car.

Part B: Which rental company charges a smaller base rate on a car rental?

Show your work.

Answer: _____

Part C: After how many miles does it become less expensive to rent from Apex Car Rental than from Reliable Car Rental? Explain how you know.
