

THOUGHT PROCESS FOR PROBLEM SOLVING

Newman's 5 Prompts

- * Please read the question to me. If you don't know a word, leave it out.
- * Tell me what the question is asking you.
- * Tell me how you are going to find the answer.
- * Show me what to do to get the answer. "Talk aloud" as you do it, so I can understand how you are thinking.
- * Now, write down your answer to the question

5th Grade

Numbers and Operations and Base- ten



Practice Problem

A number is given below.

136.25

In a different number, the 6 represents a value which is one-tenth of the value of the 6 in the number above. What value is represented by the 6 in the other number?

- A** six hundredths
- B** six tenths
- C** six ones
- D** six tens

Practice Problem

$$1(10,000) + 2(1,000) + 4(100) + 3(10) + 2(1) + 5(1/10) + 3(1/100).$$

Which number below is one-tenth of the expanded form above?

A 12422.53

B 1243.253

C 12432.53

D 12432.43

Practice Problem

Which expression is equivalent to 100,000?

A 10^4

B 10^5

C 10^6

D 10^7

Practice Problem



Nail Type By Letter	Length (inches)
F	1.241
G	1.236
H	1.274
J	0.944
K	0.942

Based on the table above, which of the following comparisons of nail length is true?

- A $F > H$
- B $J < K$
- C $J > H$
- D $G < F$

Practice Problem

Estimate the sum of $4.505 + 15.992 + 11.25 + 9.2$

☐ A. 35

☐ B. 39

☐ C. 41

☐ D. 49

Practice Problem

Which **two** statements about rounding decimals are correct?

- Ⓐ The number 5.066 rounded to the nearest hundredth is 5.07.
- Ⓑ The number 5.074 rounded to the nearest hundredth is 5.08.
- Ⓒ The number 5.117 rounded to the nearest hundredth is 5.10.
- Ⓓ The number 5.108 rounded to the nearest hundredth is 5.11.
- Ⓔ The number 5.025 rounded to the nearest hundredth is 5.02.

Practice Problem

Melanie earns \$12.50 an hour cleaning houses. If she works from 8:00am to 5:00pm, how much money will she make?

Practice Problem

Mr. Hinckley owns 83 acres of land. He divides the land into eight equal sections to sell to eight buyers. Which phrase describes how much land, in acres, each buyer will receive?

- A more than 9 and less than 10
- B more than 10 and less than 11
- C more than 11 and less than 12
- D more than 12 and less than 13

Practice Problem

Each team in a youth basketball league pays \$984 to join the league. If a team consists of 12 players and the fee is divided equally among the players, how much does each player pay?

Practice Problem

Pax wants to make fruit punch for a party using the recipe below.

Fruit Punch
1.25 L orange juice
2.5 L cranberry juice
1 L ginger ale

He will make three times the amount of fruit punch listed in the recipe. What is the total amount of fruit punch, in liters, that Pax will make?

- A 4.53
- B 4.75
- C 12.90
- D 14.25

Practice Problem

$$\begin{array}{r} 622 \\ \times 205 \\ \hline 3070 \\ 000 \\ 1244 \\ \hline 127470 \end{array}$$

A store owner used this computation to find the number of square feet of floor space in her store. Which **best** describes the error the store owner made in her computation?

- A. She added the partial products incorrectly
- B. She left off a zero at the end of the final product
- C. She regrouped correctly but did not add the 1 ten in the next step
- D. She multiplied 5 times 1 and added 2 instead of multiplying 5 times 2 and adding 1

PRACTICE PROBLEM

Evaluate the numerical expression

$$7 \times (8 + 3) - 4$$

A. 75

B. 73

C. 55

D. 49

PRACTICE PROBLEM

Which is the second step to evaluate this expression?

$$25 \div 5 - 10 \times 3 + 4$$

- A. $25 \div 5$
- B. $5 - 10$
- C. 10×3
- D. $3 + 4$

PRACTICE PROBLEM

Write “the quotient of the product of 32 and 15 and the difference of 17 and 9” as a numerical expression.

PRACTICE PROBLEM

Write the following expression using numbers and grouping symbols. Then solve.

Luke has 3 packs of 15 pieces of gum, plus and additional 4 pieces, to share among 7 people.

PRACTICE PROBLEM

A library has 6,422 music CD's stored on 26 shelves. If the same number of CD's were stored on each shelf how many CD's were stored on each shelf?

Part A. Write an expression that can be used to find out how many CD's were store on each shelf.

Part B. Evaluate the word problem.

Antoine wrote the expressions shown below.

- Expression A: $4 \times [(1.5 + 100.25) \times 3.65]$
- Expression B: $\square \times [(1.5 + 100.25) \times 3.65]$

The value of Expression B is eight times the value of Expression A. Without evaluating Expression A, determine what number belongs in the box in Expression B. Explain how you determined this number.

PRACTICE PROBLEM

What is the correct solution when this expression is simplified?

$$2 + 8 \times 6 - [(40 \div 55)] - 1]$$

- A. 3
- B. 43
- C. 47
- D. 53

Which statement is true about the values of the two expressions below?

Expression A: $3 \times (8 + 4)$

Expression B: $8 + 4$

- A** The value of Expression B is three times the value of Expression A.
- B** The value of Expression A is three times the value of Expression B.
- C** The value of Expression A is three more than the value of Expression B.
- D** The value of Expression B is three more than the value of Expression A.

PRACTICE PROBLEM

Which is a correct way of expressing $3 \times (534 - 216) - 14$?

- A. 3 times 534, minus 216, plus 14
- B. The product of 3 and 534, minus the sum of 216 and 14
- C. 3 times the difference of 534 and 216, plus 14
- D. 3 times the sum of $(534 - 216)$ and 14

PRACTICE PROBLEM

Write the numerical expression for “The sum of 6 and 4, multiplied by the difference of 15 and 3.”

PRACTICE PROBLEM

Which expression is equivalent to 32?

A. $(30 + 6) \div 3$

B. $2 \times (9 + 7)$

C. $9 \times (3 + 5)$

D. $6 + 2 \times 4$

Morgan made $1 \text{ and } \frac{5}{8}$ quarts of punch. Then she made $1 \text{ and } \frac{7}{8}$ more quarts. How much punch did she make in all?

A) $3 \frac{1}{2}$

B) $6 \frac{1}{2}$

C) $4 \frac{4}{8}$

D) $1 \text{ and } \frac{12}{8}$

Practice Problem

You give $\frac{1}{3}$ of a pan of brownies to Cynthia and $\frac{1}{6}$ pan of brownies to David. How much of the pan of brownies did you give away? Explain how you got your answer.

Make a line plot of the measurements in the table below. Then find the fair share.

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{2}$
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Four families equally share 5 pies. How much pie will each family receive?

- A) $\frac{6}{5}$
- B) $1 \frac{3}{5}$
- C) $1 \frac{1}{4}$
- D) $\frac{1}{4}$

Autumn purchased a square picture frame. Each side measured $1\frac{1}{4}$ feet. What is the area of the picture frame in square feet?

- A) 5 feet
- B) $4\frac{1}{2}$ feet
- C) 1 and $\frac{9}{16}$ square feet
- D) 4 and $\frac{4}{8}$ square feet

Practice Problem

A school wants to build a new playground by cleaning up an abandoned lot shaped like a rectangle. The students decide to use $\frac{1}{4}$ of the playground for a basketball court and $\frac{3}{8}$ of the playground for a soccer field. How much is left for the swings and play equipment? Explain your thinking.

Practice Problem

A dime is $\frac{1}{2}$ inch wide. If you put 5 dimes end to end, how long would they be from beginning to end? Explain your thinking.

Practice Problem

Lisa has 3 dogs: Rex, Maxim and Butch

Part A. Lisa feeds them on dog biscuits. Each day Rex eats $\frac{1}{2}$ of the box, Maxim eats $\frac{1}{8}$ of the box and Butch eats $\frac{1}{4}$ of the box. What fraction of the whole box do the dogs eat, in all, each day?

Cont. from previous slide

Part B. Maxim and Butch spend much of each day sleeping. Maxim sleeps $\frac{3}{5}$ and Butch sleeps $\frac{7}{10}$ of the day. Which of the two dogs sleeps for longer?

How much longer does it sleep each day?

Cont. from previous slide

Part C. Lisa's dogs often share a carton of water. Rex always drinks $\frac{1}{3}$ of the water, Maxim drinks $\frac{5}{12}$ of the water and Butch always drinks $\frac{1}{76}$ of the water. What fraction of the water is left over?

Cont. from previous slide

Part D

Lisa's dogs love to jump in and out of their dog door. Yesterday the door was used 100 times by her dogs. Rex used it for $\frac{1}{4}$ of the time and Maxim used it for $\frac{3}{10}$. How many times did Butch use the door?

Practice Problem

A baker is making cakes for a birthday party. She uses $\frac{1}{4}$ cup of oil for each cake. How many cakes can she make if she has a bottle of oil that has 6 cups in all?

Practice Problem

Ms. Darden's class is making pillow cases. Each pillow case uses $\frac{3}{4}$ of a yard of fabric. How many pillow cases can they make with $12\frac{1}{2}$ yards of fabric?

Practice Problem

A teacher has a 60 pound bag of soil. She pours all the soil into 8 containers. She puts an equal amount of soil in each container. What is the total amount of soil in each container?

- A. $\frac{2}{15}$ pounds
- B. $6\frac{1}{2}$ pounds
- C. $7\frac{1}{2}$ pounds
- D. $8\frac{1}{2}$ pounds

Practice Problem

Richard and Lalah's goal is to collect a total of $3\frac{1}{2}$ gallons of sap from the maple trees. Richard collected $1\frac{3}{4}$ gallon and Lalah collected $5\frac{3}{5}$ gallons. By how much did they beat their goal? Show how you got your answer.

Practice Problem

How many 4 inch long pieces of wood could be cut from a board that is 2 yards long?

- a. 18 pieces
- b. 24 pieces
- c. 12 pieces
- d. 6 pieces

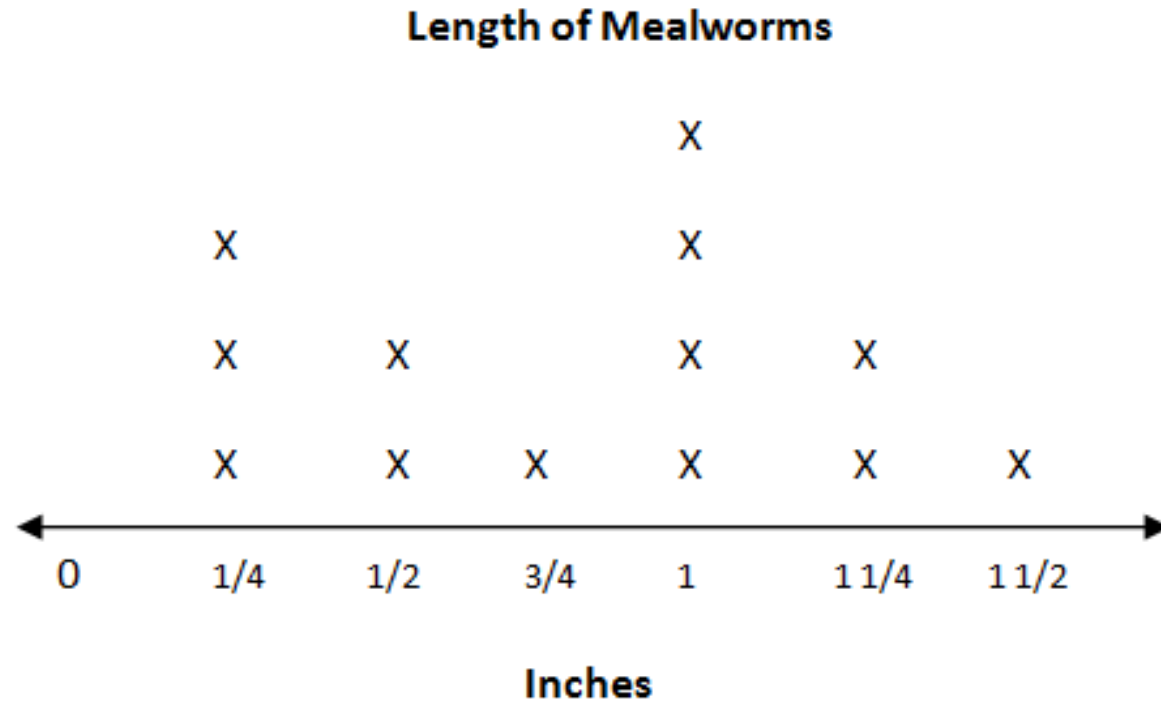
Practice Problem

There are three books in Frank's backpack. The math book weighs 1 pound, 8 ounces. The reading book weighs 1 pound, 4 ounces. The science book weighs 1 pound, 2 ounces. What is the combined weight of the three books, in ounces?

- a. 44 ounces
- b. 62 ounces
- c. 50 ounces
- d. 38 ounces

Practice Problem

A 5th grade science class is raising mealworms. The students measured the mealworms and recorded the lengths on this line plot.

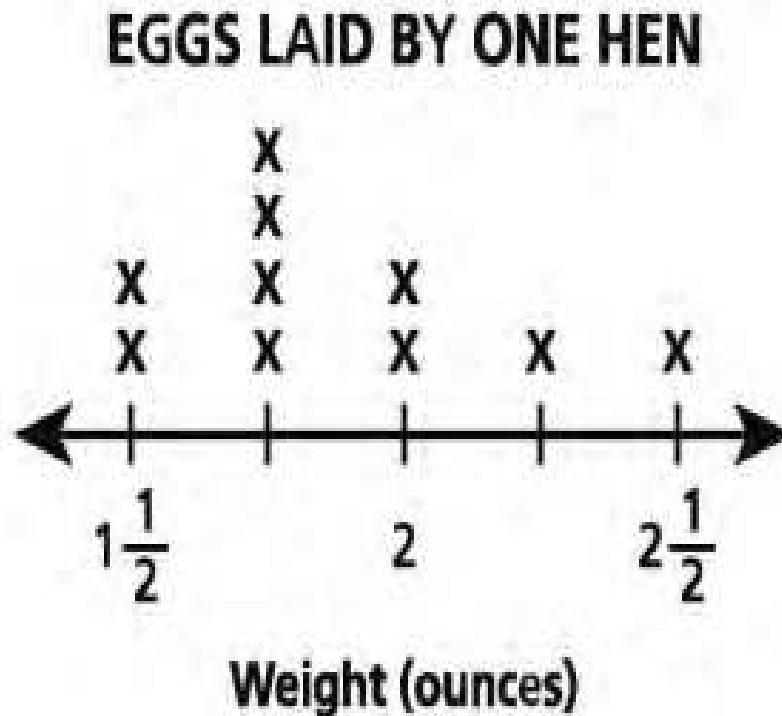


According to this line plot, what was the length of the longest mealworm?

- A. $\frac{1}{4}$ inch
- B. $\frac{3}{4}$ inch
- C. 1 inch
- D. $1\frac{1}{2}$ inches

Practice Problems

The line plot shows the weights of ten eggs laid by one hen.



What is the total weight, in ounces, of the four heaviest eggs?

A 4

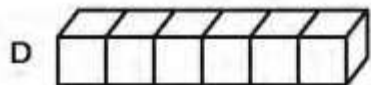
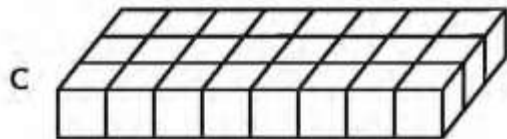
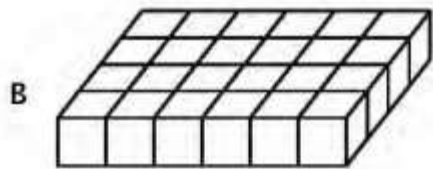
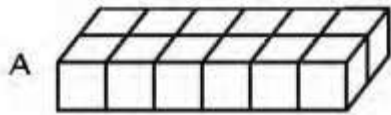
B 7

C $8\frac{1}{2}$

D $8\frac{3}{4}$

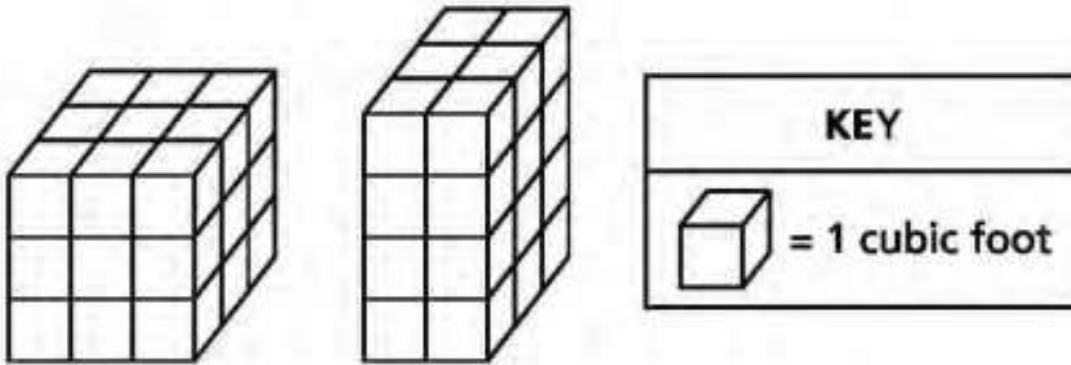
Practice Problem

In her math class, Carla used unit cubes to build a right rectangular prism with a volume of 24 cubic units. The height of the prism was two units. Which figure could be the bottom layer of the prism?



Practice Problems

The two right rectangular prisms below have different volumes.

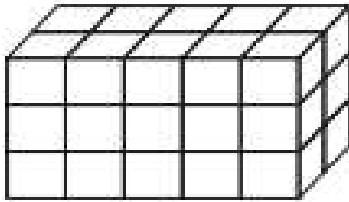


What is the difference in volume, in cubic feet, of the two prisms?

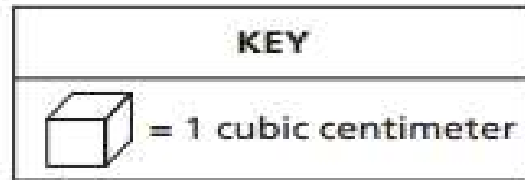
- A 1
- B 3
- C 6
- D 9

Practice Problems

Prism X is shown below. The volume of Prism Y is 10 cubic centimeters greater than the volume of Prism X.



Prism X



What is the volume of Prism Y?

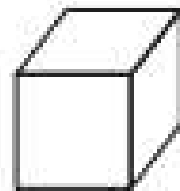
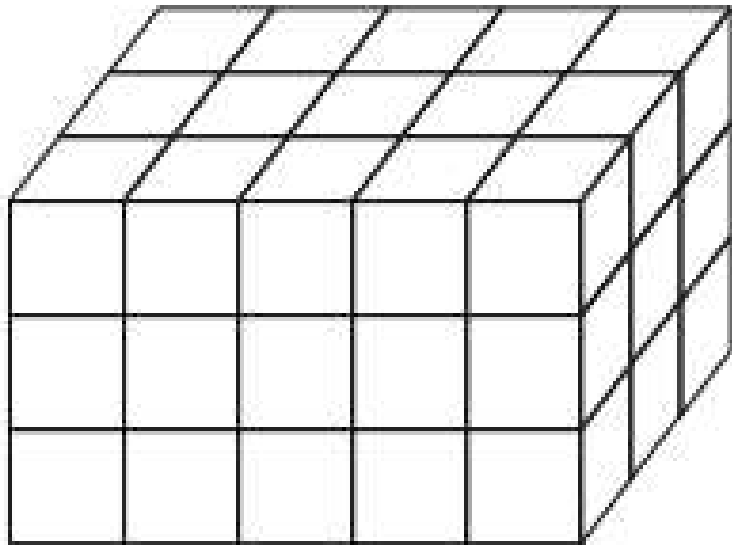
Answer _____ cubic centimeters

What could be the length, width, and height of Prism Y?

Practice Problems

124050049_4

What is the volume, in cubic centimeters, of the figure below?

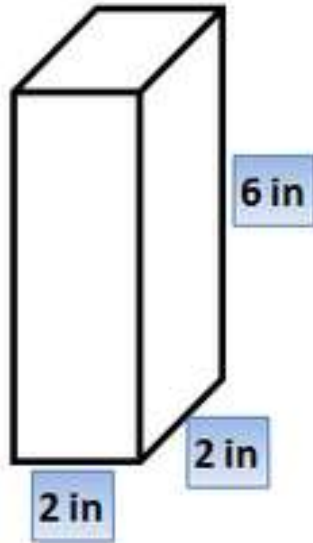


= 1 cubic centimeter

- A** 15
- B** 24
- C** 30
- D** 45

PRACTICE PROBLEM

Which of the following equations could be used to calculate the volume of this rectangular prism?

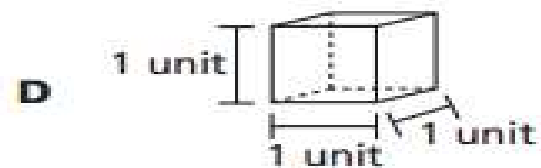
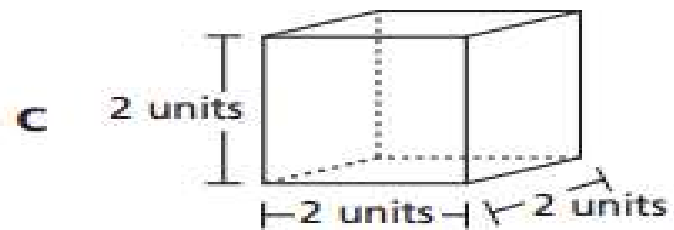
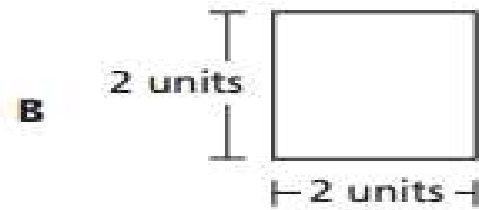


- a. $V = 2 + 2 + 6$
- b. $V = \frac{1}{2} (2 \times 6)$
- c. $V = 2 \times 2 \times 6$
- d. $V = (2 \times 2) + 6$

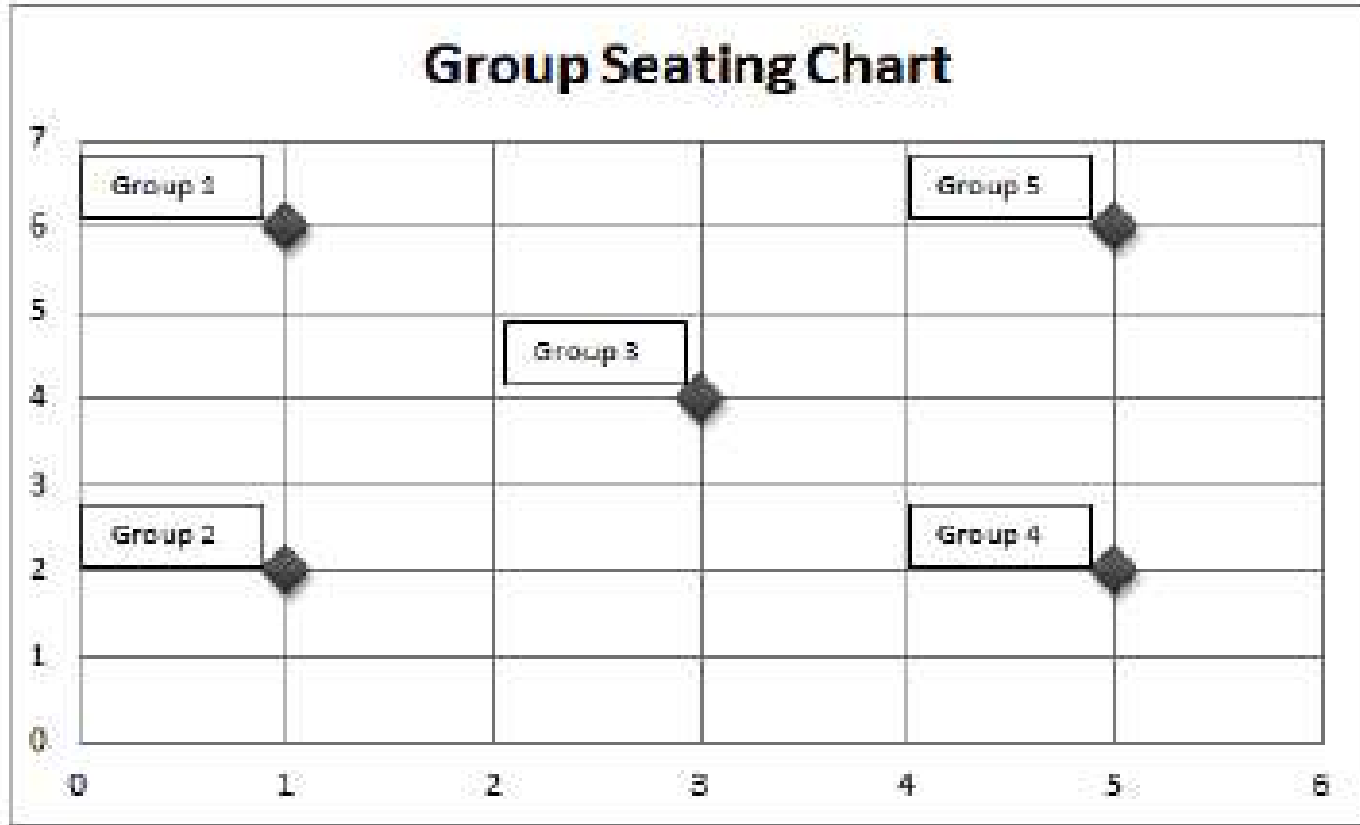
Practice Problems

13-4050060_4

Which diagram represents a volume of one cubic unit?



Practice Problem



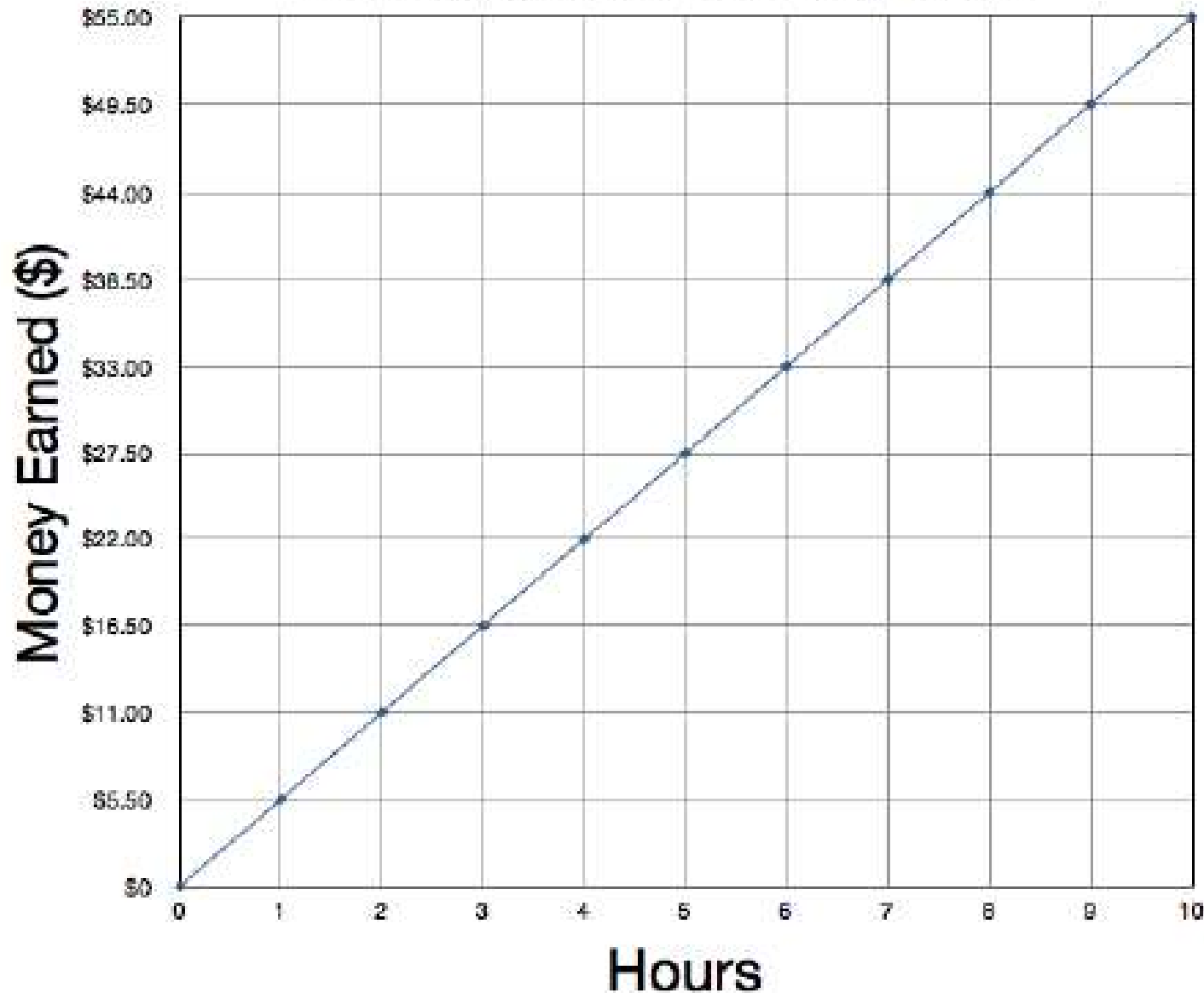
Aaron's teacher assigned each student to a new group. She posted this diagram to help everyone locate their group's tables.

Aaron's group sits at coordinates (5, 6). At which group table would Aaron sit?

- A) He sits with Group 1.
- B) He sits with Group 3.
- C) He sits with Group 4.
- D) He sits with Group 5.

Practice Problem

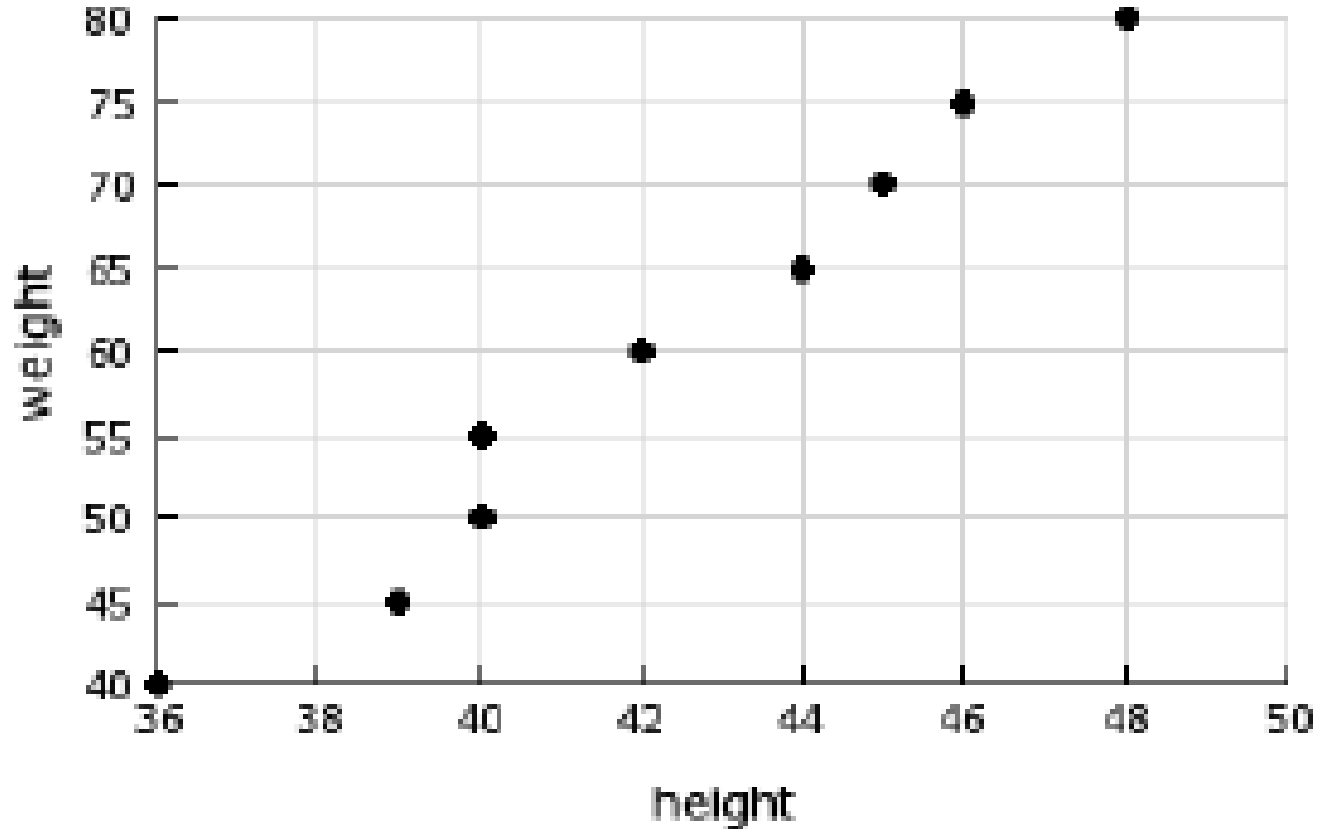
Money Earned for Doing Chores



Casey's mom pays her \$5.50 per hour for doing chores around the house. The graph shows how much money she can earn by doing chores. How much money will Casey earn if she works 2.5 hours?

Answer: _____

Practice Problem

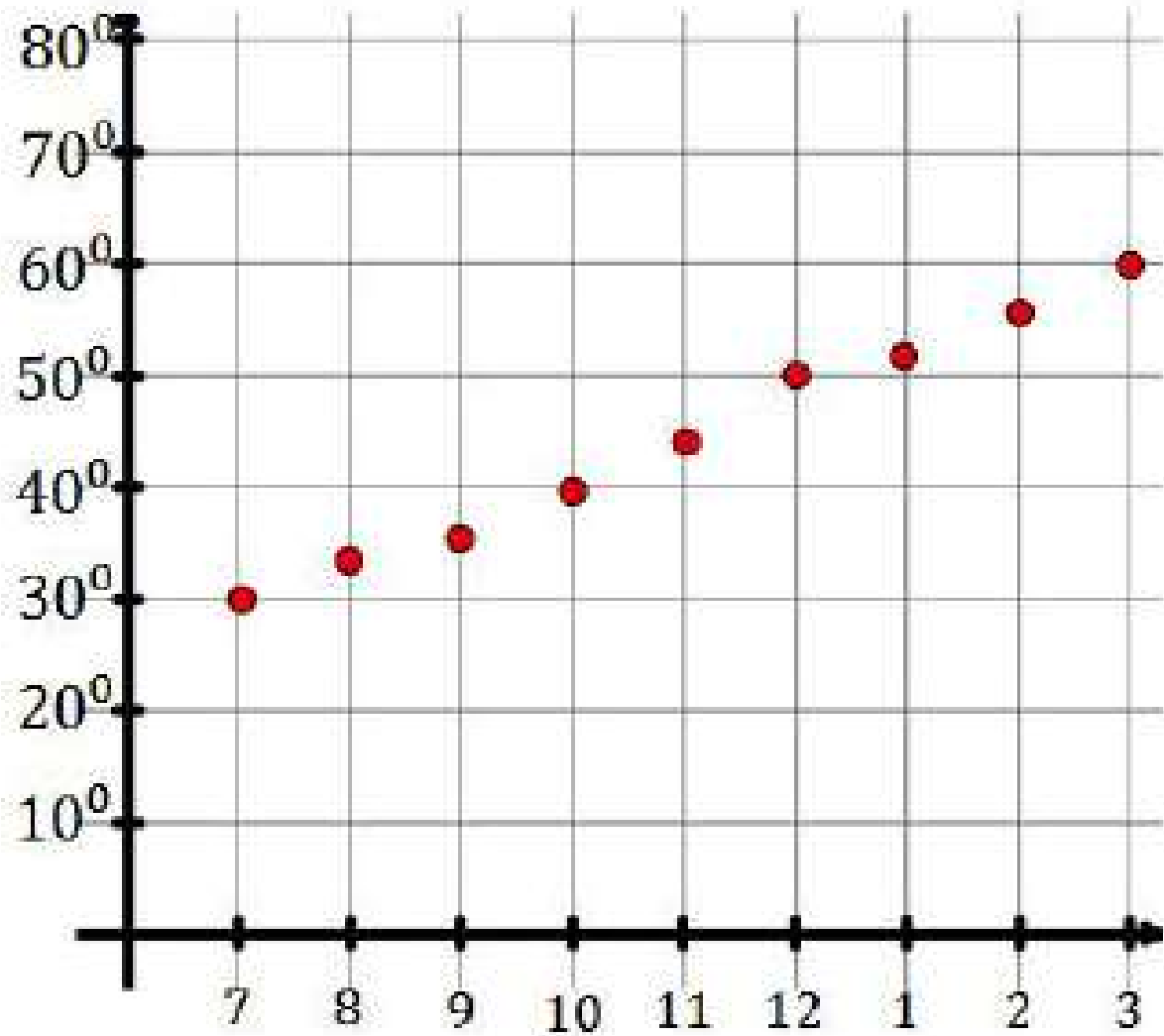


A pediatrician plotted the heights and weights of 9 random kids that came through her office.

What is the height difference between the tallest and shortest kid?

- A) 9 inches
- B) 12 inches
- C) 15 inches
- D) 22 inches

Practice Problem



Samaria plotted coordinate points that represent the temperature at the given time of day, between 7 am and 3 pm.

What was the temperature at 2 pm?

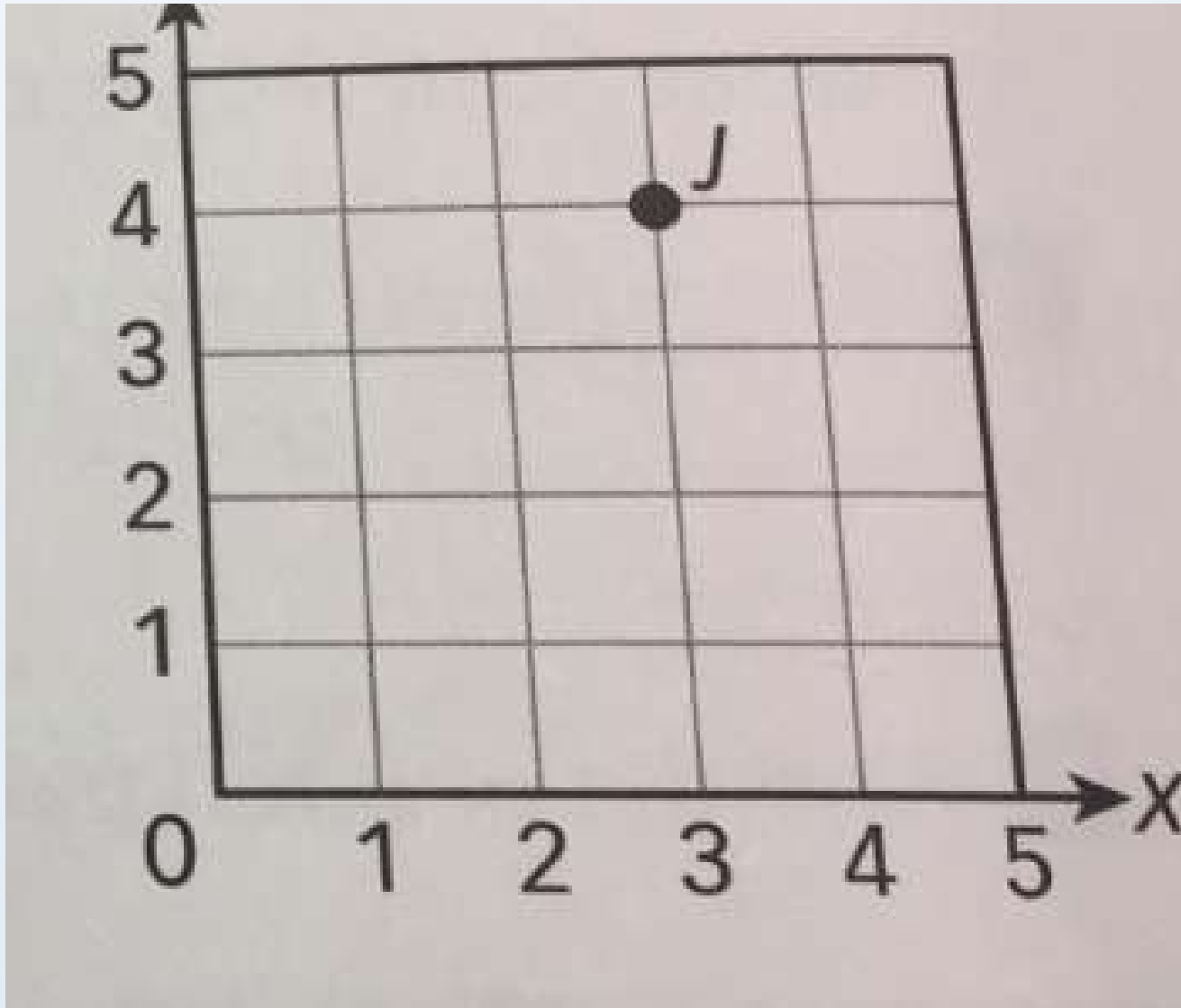
A) 47°

B) 51°

C) 54°

D) 56°

Practice Problem



Irvin identified the ordered pair for point J on the coordinate plane as $(4,3)$. Explain what is wrong with Irvin's ordered pair.

PRACTICE PROBLEM

What attribute do a rectangle, parallelogram, rhombus, and square have in common?

- A) two equal sides
- B) four equal sides
- C) four right angles
- D) two sets of parallel sides

PRACTICE PROBLEM

Which shape or shapes have 4 congruent sides, two sets of parallel sides, and at least one right angle?

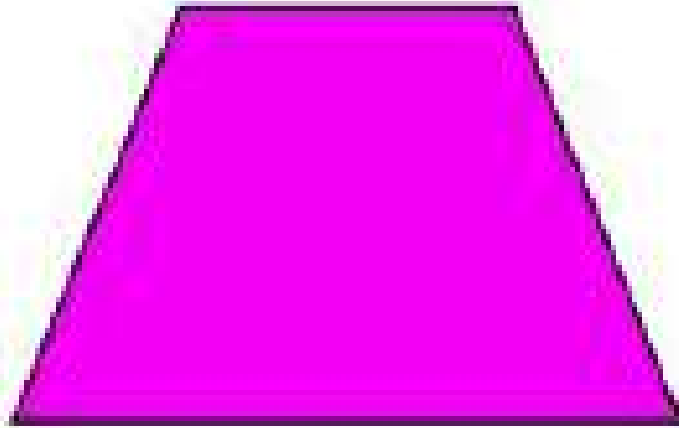
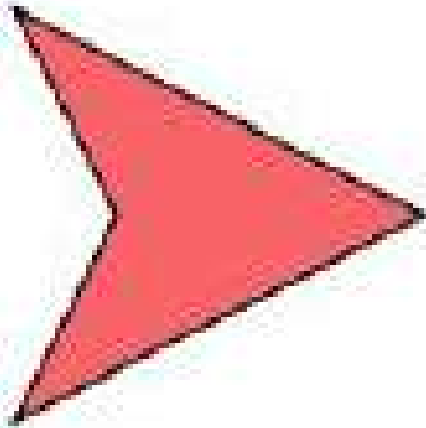
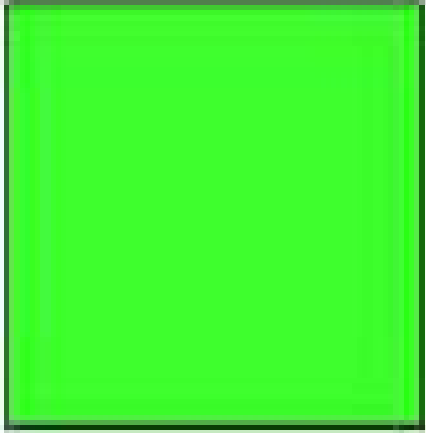
A) square

B) rhombus

C) rhombus and square

D) rectangle, rhombus, and square

Practice Problem

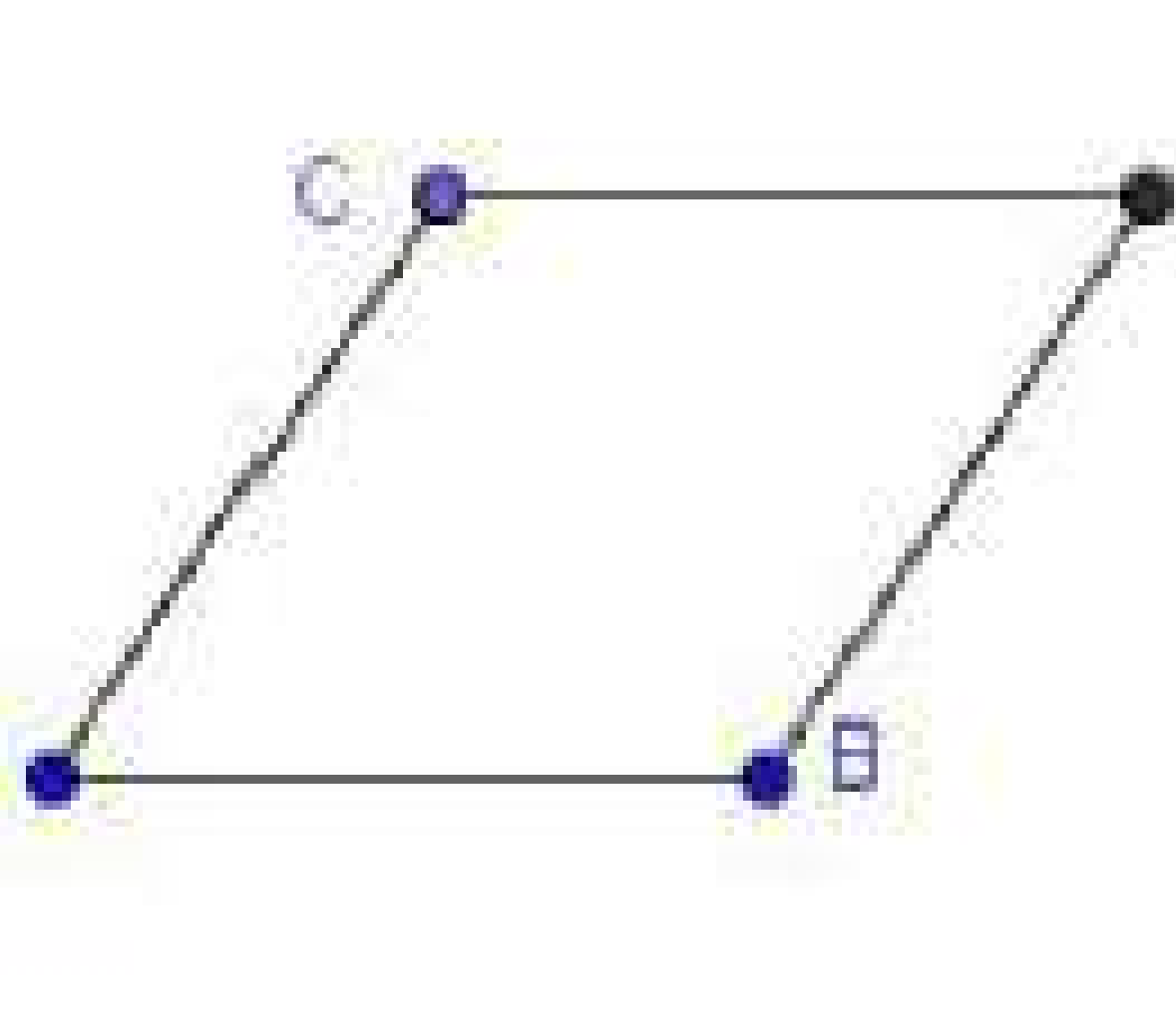


The figures in the picture are all

_____.

Answer:

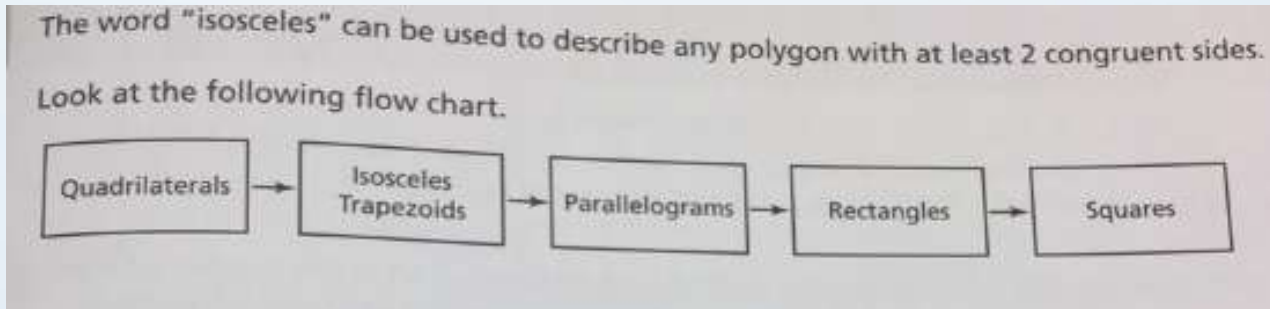
Practice Problem



The rhombus shown here is also a:

- A) parallelogram.
- B) rectangle.
- C) square.
- D) trapezoid.

Practice Problem



Part A:

Draw an example of an isosceles trapezoid

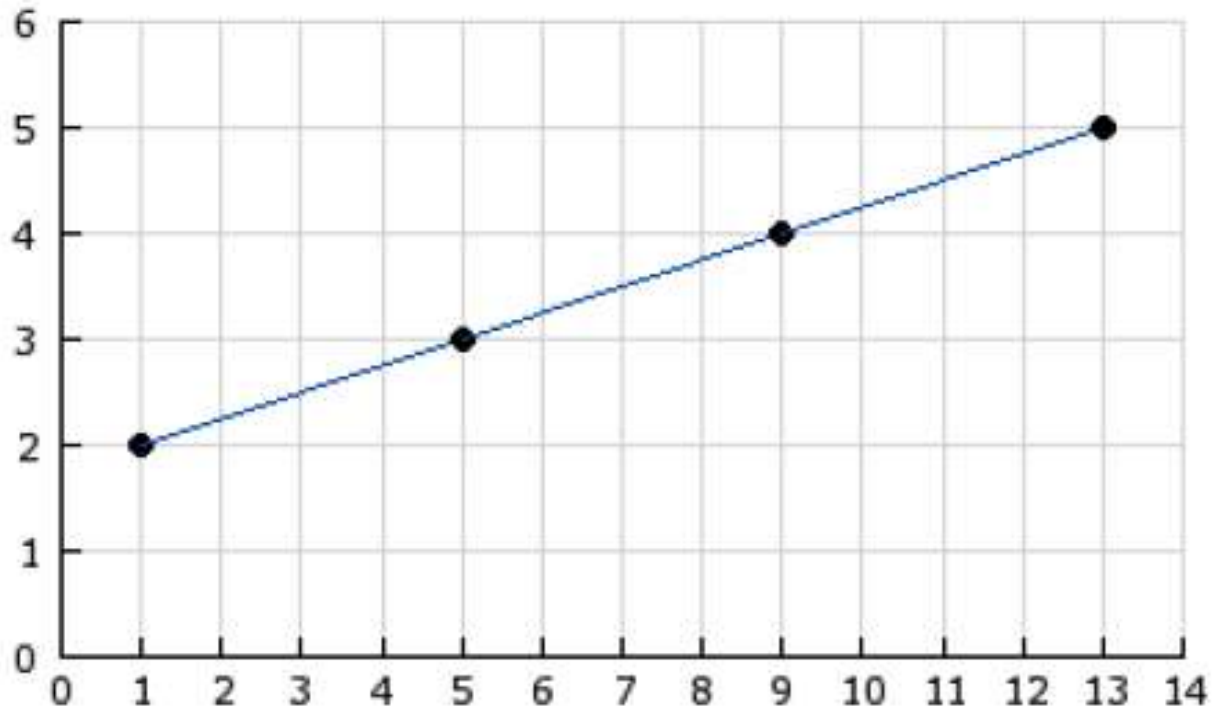
Part B:

Explain how isosceles trapezoids relate to parallelogram.

Part C:

Can you use the term isosceles to describe a rectangle? Explain your reasoning.

Use the graph to complete the input-output table. List the answer in the format of x,y.



Input	Output
1	x
5	3
13	y