

If  $x = -3$ , what is the value of  $-3x$  ?

- Ⓐ -9
- Ⓑ -6
- Ⓒ -1
- Ⓓ 1
- Ⓔ 9

Item Number: M012042

Subtract:  $\frac{3x}{7} - \frac{x}{7} =$

(A)  $\frac{2}{7}$

(B) 3

(C)  $2x$

(D)  $\frac{x}{7}$

(E)  $\frac{2x}{7}$

Item Number: M022185

Which of these is equal to  $2x - 3y + 7x + 5y$ ?

- (A)  $5x + 2y$
- (B)  $5x + 8y$
- (C)  $9x + 2y$
- (D)  $9x + 8y$

Item Number: M032036

If  $a + 2b = 5$  and  $c = 3$ , what is the value of  $a + 2(b + c)$ ?

Answer: \_\_\_\_\_

Item Number: M032557

Sam wanted to find three consecutive even numbers that add up to 84.  
He wrote the equation  $k + (k + 2) + (k + 4) = 84$ .  
What does the letter  $k$  represent?

- Ⓐ The least of the three even numbers
- Ⓑ The middle even number
- Ⓒ The greatest of the three even numbers
- Ⓓ The average of the three even numbers

Item Number: M022002

Graham has twice as many books as Bob. Chan has six more books than Bob. If Bob has  $x$  books, which of the following represents the total number of books the three boys have?

- (A)  $3x + 6$
- (B)  $3x + 8$
- (C)  $4x + 6$
- (D)  $5x + 6$
- (E)  $8x + 2$

Item Number: M022251

Carla paid  $x$  zeds for 3 cartons of juice. What is the price in zeds of 1 carton of juice?

(A)  $\frac{x}{3}$

(B)  $\frac{3}{x}$

(C)  $3 + x$

(D)  $3x$

Item Number: M032044

If  $\frac{12}{n} = \frac{36}{21}$ , then  $n$  equals

- Ⓐ 3
- Ⓑ 7
- Ⓒ 36
- Ⓓ 63

Item Number: M012040



If  $L = 4$  when  $K = 6$  and  $M = 24$ , which of the following is true?

Ⓐ  $L = \frac{M}{K}$

Ⓑ  $L = \frac{K}{M}$

Ⓒ  $L = KM$

Ⓓ  $L = K + M$

Ⓔ  $L = M - K$

Item Number: M022196

If  $4(x + 5) = 80$ , then  $x =$

Answer: \_\_\_\_\_

Item Number: M022253

If  $x + 3y = 11$  and  $2x + 3y = 13$ , then  $y =$

- Ⓐ 3
- Ⓑ 2
- Ⓒ -2
- Ⓓ -3

Item Number: M032728

If  $x - y = 5$  and  $\frac{x}{2} = 3$ , what is the value of  $y$ ?

- (A) 6
- (B) 1
- (C) -1
- (D) -7

Item Number: M032208

If  $\frac{a}{b} = 70$ , then  $\frac{a}{2b} =$

- (A) 35
- (B) 68
- (C) 72
- (D) 140

Item Number: M032210

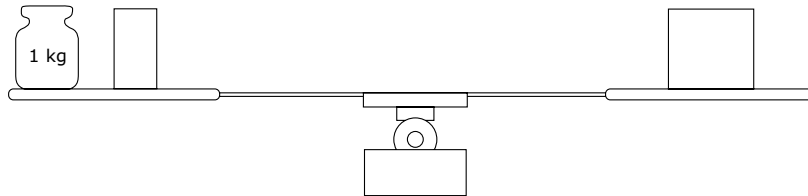
At a market, 7 oranges and 4 lemons cost 43 zeds, and 11 oranges and 12 lemons cost 79 zeds. Using  $x$  to represent the cost of an orange and  $y$  to represent the cost of a lemon, write two equations that could be used to find the values of  $x$  and  $y$ .

Equation 1: \_\_\_\_\_

Equation 2: \_\_\_\_\_

Item Number: M032545

The objects on the scale make it balance exactly. On the left pan there is a 1 kg weight (mass) and half a brick. On the right pan there is one brick.



What is the weight (mass) of one brick?

- (A) 0.5 kg
- (B) 1 kg
- (C) 2 kg
- (D) 3 kg

Item Number: M012002

If  $y = 3x + 2$ , which of these expresses  $x$  in terms of  $y$ ?

Ⓐ  $x = \frac{y-2}{3}$

Ⓑ  $x = \frac{y+2}{3}$

Ⓒ  $x = \frac{y}{3} - 2$

Ⓓ  $x = \frac{y}{3} + 2$

Item Number: M032046



Matchsticks are arranged as shown in the figures.

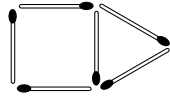


Figure 1

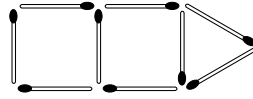


Figure 2

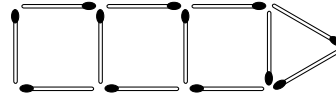


Figure 3

If the pattern is continued, how many matchsticks would be used to make Figure 10?

- (A) 30
- (B) 33
- (C) 36
- (D) 39
- (E) 42

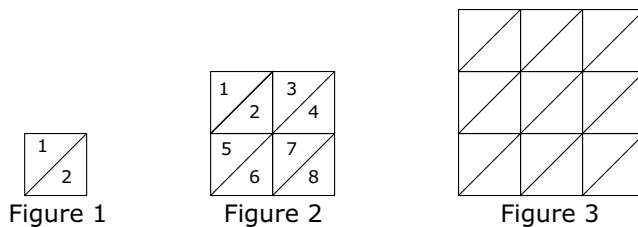
Item Number: M012017

The numbers in the sequence 7, 11, 15, 19, 23, ... increase by four. The numbers in the sequence 1, 10, 19, 28, 37, ... increase by nine. The number 19 is in both sequences. If the two sequences are continued, what is the next number that is in BOTH the first and the second sequences?

Answer: \_\_\_\_\_

Item Number: M022008

The three figures below are divided into small congruent triangles.



- A. Complete the table below. First, fill in how many small triangles make up Figure 3. Then, find the number of small triangles that would be needed for the 4th figure if the sequence of figures is extended.

Figure	Number of Small Triangles
1	2
2	8
3	
4	

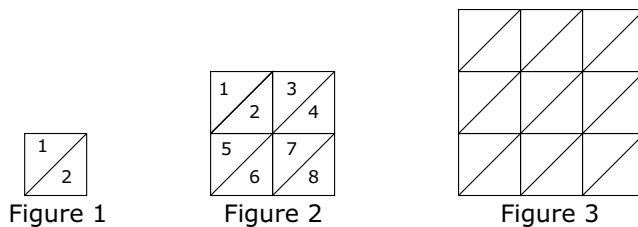
- B. The sequence of figures is extended to the 7th figure. How many small triangles would be needed for Figure 7?

Answer: \_\_\_\_\_

- C. The sequence of figures is extended to the 50th figure. Explain a way to find the number of small triangles in the 50th figure that does not involve drawing it and counting the number of triangles.

Item Number: M022261A

The three figures below are divided into small congruent triangles.



- A. Complete the table below. First, fill in how many small triangles make up Figure 3. Then, find the number of small triangles that would be needed for the 4th figure if the sequence of figures is extended.

Figure	Number of Small Triangles
1	2
2	8
3	
4	

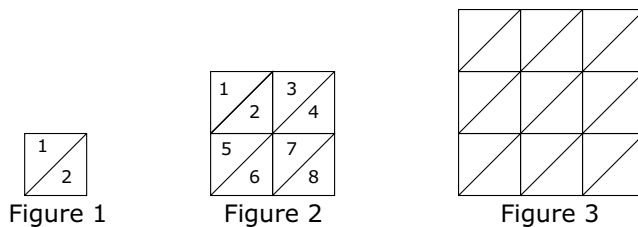
- B. The sequence of figures is extended to the 7th figure. How many small triangles would be needed for Figure 7?

Answer: \_\_\_\_\_

- C. The sequence of figures is extended to the 50th figure. Explain a way to find the number of small triangles in the 50th figure that does not involve drawing it and counting the number of triangles.

Item Number: M022261B

The three figures below are divided into small congruent triangles.



- A. Complete the table below. First, fill in how many small triangles make up Figure 3. Then, find the number of small triangles that would be needed for the 4th figure if the sequence of figures is extended.

Figure	Number of Small Triangles
1	2
2	8
3	
4	

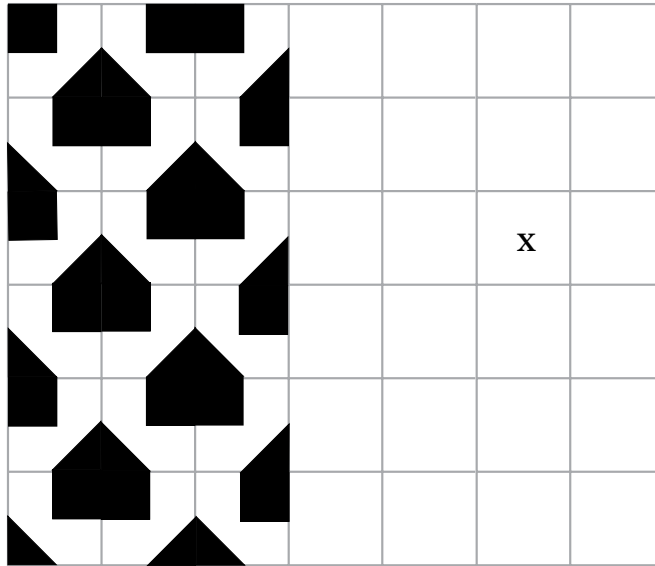
- B. The sequence of figures is extended to the 7th figure. How many small triangles would be needed for Figure 7?

Answer: \_\_\_\_\_

- C. The sequence of figures is extended to the 50th figure. Explain a way to find the number of small triangles in the 50th figure that does not involve drawing it and counting the number of triangles.

Item Number: M022261C

If the pattern on the grid below was continued, what letter would identify the orientation of the tile in the cell labeled X?



Answer: \_\_\_\_\_

Item Number: M032744

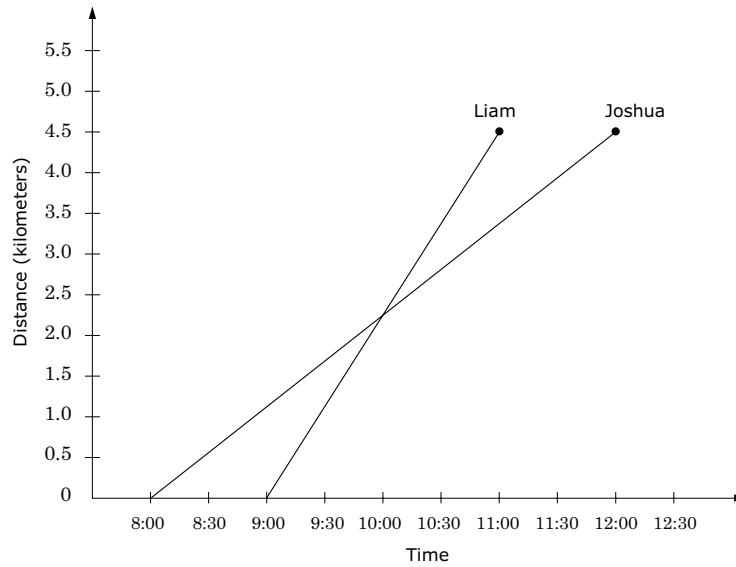
$(3, 6)$  ,  $(6, 15)$  ,  $(8, 21)$

Which of these describes how to get the second number from the first number in every ordered pair above?

- Ⓐ Add 3
- Ⓑ Subtract 3
- Ⓒ Multiply by 2
- Ⓓ Multiply by 2 and then add 3
- Ⓔ Multiply by 3 and then subtract 3

Item Number: M012029

The graph represents the distance and time of a hike taken by Joshua and Liam.



If they both started from the same place and walked in the same direction, at what time did they meet?

- (A) 8:00
- (B) 8:30
- (C) 9:00
- (D) 10:00
- (E) 11:00

Item Number: M012025



The table shows scores for a class on a 10-point test.

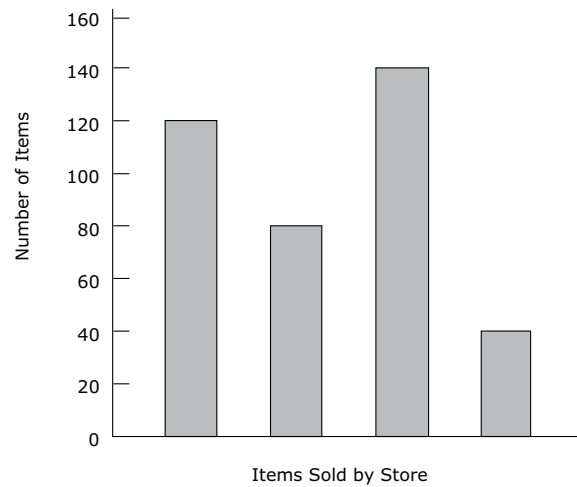
Test Score	Tally	Frequency
4	/	1
5	///	3
6	//// /	6
7	//	2
8	////	4
9	///	3
10	/	1

How many in the class had a score greater than 7?

- (A) 2
- (B) 8
- (C) 10
- (D) 12
- (E) 20

Item Number: M012037

The graph shows the number of pens, pencils, rulers, and erasers sold by a store in one week.



The names of the items are missing from the graph. Pens were the item most often sold, and fewer erasers than any other item were sold. More pencils than rulers were sold. How many pencils were sold?

- (A) 40
- (B) 80
- (C) 120
- (D) 140

Item Number: M022189

Betty talks for less than 2 hours per month. Which plan would be less expensive for her?

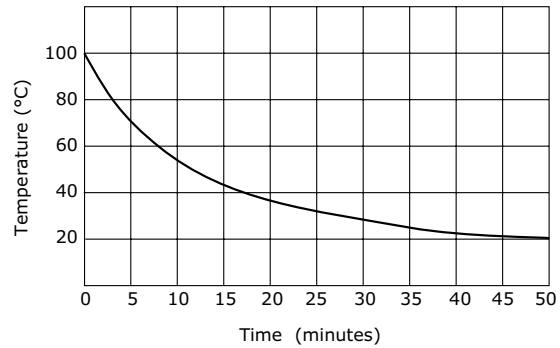
Less expensive plan \_\_\_\_\_

Explain your answer in terms of both the monthly fee and free minutes.

Item Number: M032762

A beaker of water which has reached boiling point is allowed to cool. The temperature of the water is recorded at five minute intervals, and a temperature-time graph is drawn.

**Cooling Curve**



About how many minutes did it take for the water to cool the first 20 degrees?

- (A) 3
- (B) 8
- (C) 37
- (D) 50

Item Number: M022135

Frank talks for 5 hours per month at the night rate. What would each plan cost him per month? Show your work.

Cost Per Month for Plan A: \_\_\_\_\_ zeds

Cost Per Month for Plan B: \_\_\_\_\_ zeds

Item Number: M032763

Darlene signed up for the *Plan B*, and the cost of one month of service was 75 zeds. How many minutes did she talk that month? Show your work.

Minutes talked \_\_\_\_\_

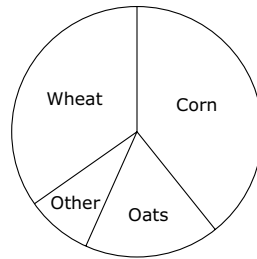
Item Number: M032764

Joe had three test scores of 78, 76, and 74, while Mary had scores of 72, 82, and 74. How did Joe's average (mean) score compare with Mary's average (mean) score?

- (A) Joe's was 1 point higher.
- (B) Joe's was 1 point lower.
- (C) Both averages were the same.
- (D) Joe's was 2 points higher.
- (E) Joe's was 2 points lower.

Item Number: M012006

The graph shows the distribution of crops grown in a certain country.



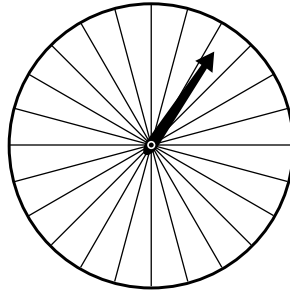
According to the information in the graph, which of these statements is true?

- (A) More oats are grown than wheat.
- (B) Corn is more than one-half of the country's crop.
- (C) Oats are more than one-third of the country's crop.
- (D) The total crop of oats and wheat is greater than the corn crop.

Item Number: M012014



The figure below shows a spinner with 24 sectors. When someone spins the arrow, it is equally likely to stop on any sector.



$\frac{1}{8}$  of the sectors are blue,  $\frac{1}{24}$  are purple,  $\frac{1}{2}$  are orange, and  $\frac{1}{3}$  are red. If a person spins the arrow, on which color sector is the spinner LEAST likely to stop?

- (A) blue
- (B) purple
- (C) orange
- (D) red

Item Number: M022252

In a school there were 1,200 students (boys and girls). A sample of 100 students was selected at random, and 45 boys were found in the sample. Which of these is most likely to be the number of boys in the school?

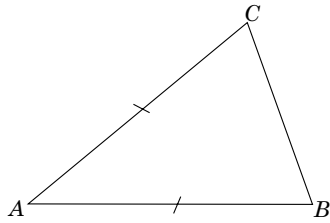
- (A) 450
- (B) 500
- (C) 540
- (D) 600

Item Number: M032271

In an eighth-grade class of 30 students, the probability that a student chosen at random will be less than 13 years old is  $\frac{1}{5}$ . How many students in the class are less than 13 years old?

- (A) Two
- (B) Three
- (C) Four
- (D) Five
- (E) Six

Item Number: M022146

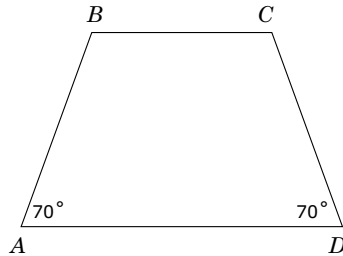


The triangle  $ABC$  has  $AB = AC$ .

Draw a line to divide triangle  $ABC$  into two congruent triangles.

Item Number: M032403

$ABCD$  is a trapezoid.



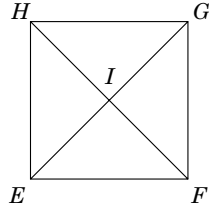
Another trapezoid,  $GHIJ$  (not shown), is congruent (the same size and shape) to  $ABCD$ . Angles  $G$  and  $J$  each measure  $70^\circ$ . Which of these could be true?

- (A)  $GH = AB$
- (B) Angle  $H$  is a right angle.
- (C) All sides of  $GHIJ$  are the same length.
- (D) The perimeter of  $GHIJ$  is 3 times the perimeter of  $ABCD$ .
- (E) The area of  $GHIJ$  is less than the area of  $ABCD$ .

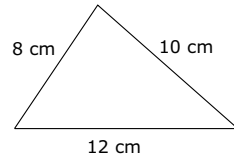
Item Number: M012015

In square  $EFGH$ , which of these is FALSE?

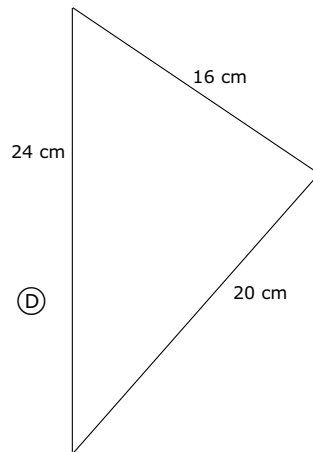
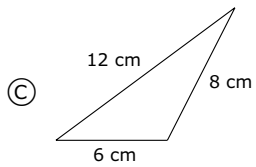
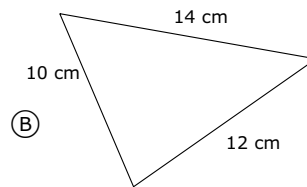
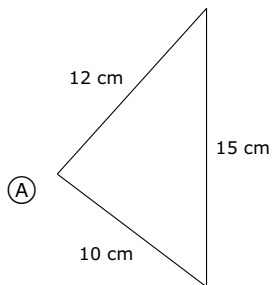
- (A)  $\triangle EIF$  and  $\triangle EIH$  are congruent.
- (B)  $\triangle GHI$  and  $\triangle GHF$  are congruent.
- (C)  $\triangle EFH$  and  $\triangle EGH$  are congruent.
- (D)  $\triangle EIF$  and  $\triangle GIH$  are congruent.



Item Number: M012005

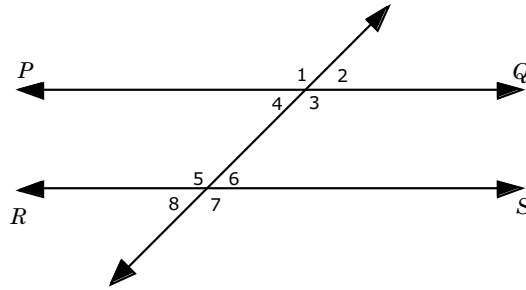


Which of the following triangles is similar to the triangle shown above?



Item Number: M032261

In this figure,  $PQ$  and  $RS$  are parallel.



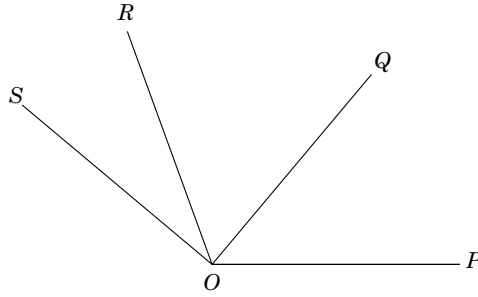
Of the following, which pair of angles has the sum of  $180^\circ$ ?

- (A)  $\angle 5$  and  $\angle 7$
- (B)  $\angle 3$  and  $\angle 6$
- (C)  $\angle 1$  and  $\angle 5$
- (D)  $\angle 1$  and  $\angle 7$
- (E)  $\angle 2$  and  $\angle 8$

Item Number: M022142



In the figure, the measure of  $\angle POR$  is  $110^\circ$ , the measure of  $\angle QOS$  is  $90^\circ$ , and the measure of  $\angle POS$  is  $140^\circ$ .

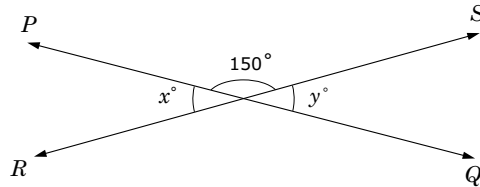


What is the measure of  $\angle QOR$ ?

Answer: \_\_\_\_\_

Item Number: M022202

In the figure,  $PQ$  and  $RS$  are intersecting straight lines.



What is the value of  $x + y$  ?

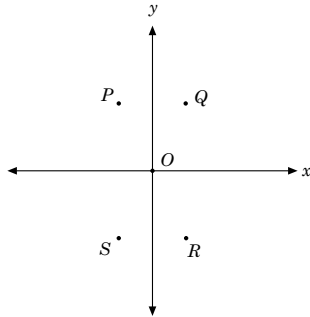
- (A) 15
- (B) 30
- (C) 60
- (D) 180
- (E) 300

Item Number: M012039

A straight line passes through the points (2,3) and (4,7). Which of these points is also on the line?

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

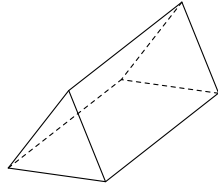
Item Number: M022016



In the coordinate plane above, which point could have coordinates  $(2, -4)$ ?

- (A)  $P$
- (B)  $Q$
- (C)  $R$
- (D)  $S$

Item Number: M032588

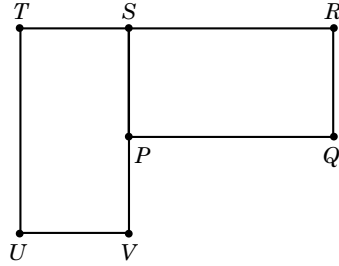


Which of these could be folded to make a shape like the 3-D figure above?

- (A)
- (B)
- (C)
- (D)

Item Number: M032489

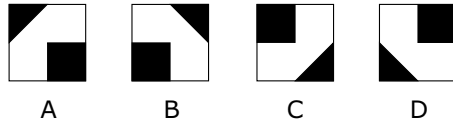
Rectangle  $PQRS$  can be rotated (turned) onto rectangle  $UVST$ .



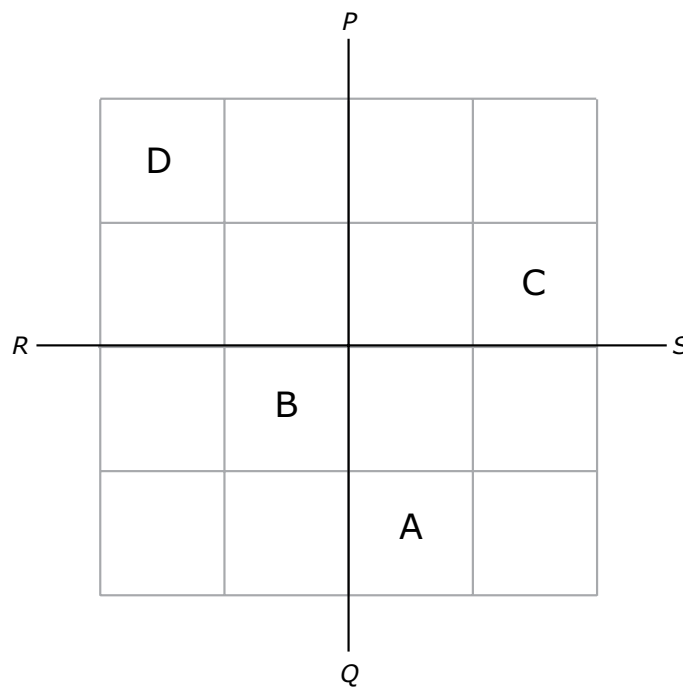
What point is the center of rotation?

- (A)  $P$
- (B)  $R$
- (C)  $S$
- (D)  $T$
- (E)  $V$

Item Number: M022154

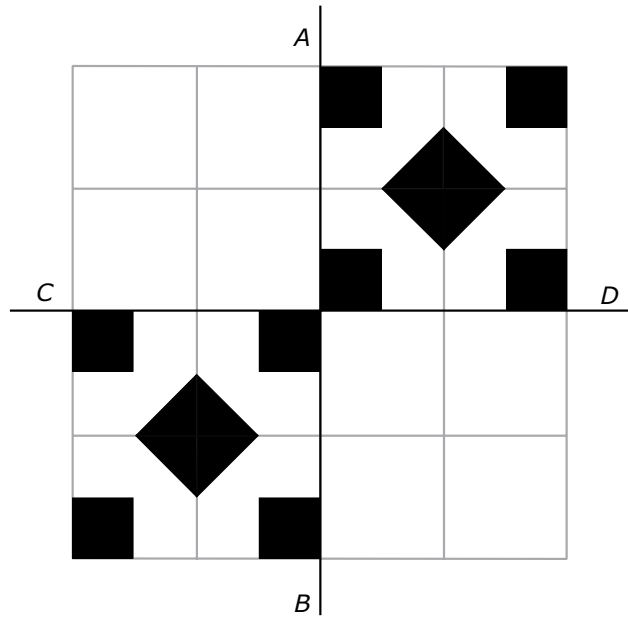


Continue to identify the tiles as shown above. On the grid below, write the letters A, B, C, or D to make a symmetrical pattern where  $PQ$  and  $RS$  would be lines of symmetry. Arrange the tiles to make a pattern.



Item Number: M032745

There are several ways of arranging the tiles so that they form patterns. The grid below has been shaded to show how tiles can be placed on some of the squares. The pattern can be continued so that  $AB$  and  $CD$  are lines of symmetry.

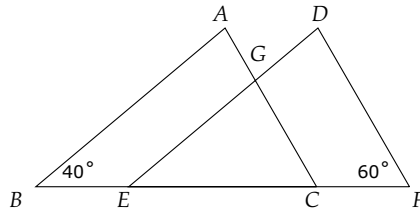


Shade in all the remaining squares on the grid so that the resulting pattern is symmetrical about line  $AB$ , and also is symmetrical about line  $CD$ .

Item Number: M032743



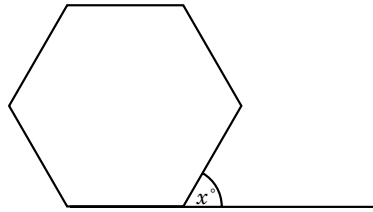
In this figure, triangles  $ABC$  and  $DEF$  are congruent with  $BC = EF$ .



What is the measure of angle  $EGC$  ?

- (A)  $20^\circ$
- (B)  $40^\circ$
- (C)  $60^\circ$
- (D)  $80^\circ$
- (E)  $100^\circ$

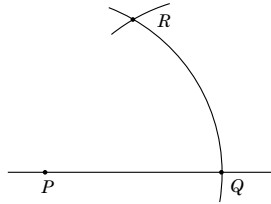
Item Number: M012026



The figure above is a regular hexagon. What is the value of  $x$ ?

Answer: \_\_\_\_\_

Item Number: M032693



In the figure above, an arc of a circle with center  $P$  has been drawn to cut the line at  $Q$ . Then an arc with the same radius and center  $Q$  was drawn to cut the first arc at  $R$ . What would be the size of angle  $PRQ$ ?

- (A)  $30^\circ$
- (B)  $45^\circ$
- (C)  $60^\circ$
- (D)  $75^\circ$

Item Number: M032689

The number of 250 milliliter bottles that can be filled from 400 liters of water is

- Ⓐ 16
- Ⓑ 160
- Ⓒ 1,600
- Ⓓ 16,000

Item Number: M022005

Which of these is the LEAST amount of time?

- Ⓐ 1 day
- Ⓑ 20 hours
- Ⓒ 1,800 minutes
- Ⓓ 90,000 seconds

Item Number: M022188

Which of these units would usually be used for an area the size of a soccer field?

- Ⓐ square centimeters
- Ⓑ cubic centimeters
- Ⓒ square meters
- Ⓓ cubic meters

Item Number: M032699

Which of these could be the measure of the area of a triangle?

- Ⓐ 2 cm
- Ⓑ 3 m
- Ⓒ  $5 \text{ cm}^2$
- Ⓓ  $8 \text{ m}^3$

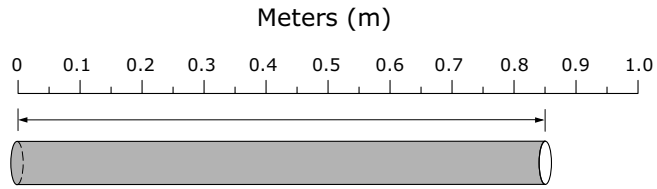
Item Number: M032732

The length of a box is 9 cm to the nearest centimeter. Which of these could be the actual length of the box?

- Ⓐ 10 cm
- Ⓑ 9.9 cm
- Ⓒ 9.6 cm
- Ⓓ 8.6 cm

Item Number: M012003



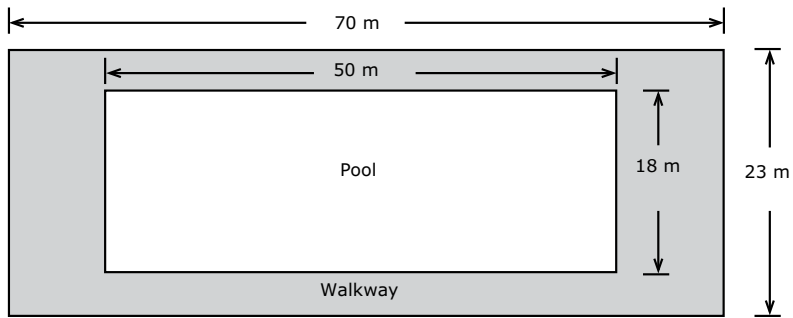


What is the length of the pipe being measured?

- (A) 0.085 m
- (B) 0.805 m
- (C) 0.85 m
- (D) 8.5 m

Item Number: M012038

A rectangular shaped swimming pool has a paved walkway around it as shown.



What is the area of the paved walkway?

- (A)  $100 \text{ m}^2$
- (B)  $161 \text{ m}^2$
- (C)  $710 \text{ m}^2$
- (D)  $1,610 \text{ m}^2$

Item Number: M022021

Oranges are packed in boxes. The average diameter of the oranges is 6 cm, and the boxes are 60 cm long, 36 cm wide, and 24 cm deep.

Which of these is the BEST approximation of the number of oranges that can be packed in a box?

- (A) 30
- (B) 240
- (C) 360
- (D) 1,920

Item Number: M032647

A thin wire 20 centimeters long is formed into a rectangle. If the width of this rectangle is 4 centimeters, what is its length?

- (A) 5 centimeters
- (B) 6 centimeters
- (C) 12 centimeters
- (D) 16 centimeters

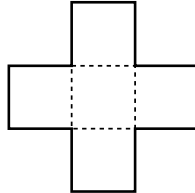
Item Number: M012030

Kris begins her homework at 6:40. If it takes Kris three-quarters of an hour to do her homework, at what time will she finish?

Answer: \_\_\_\_\_

Item Number: M022148

The figure consists of 5 squares of equal area. The area of the whole figure is  $245 \text{ cm}^2$ .



A. Find the area of one square.

Answer: \_\_\_\_\_  $\text{cm}^2$

B. Find the length of one side of one square.

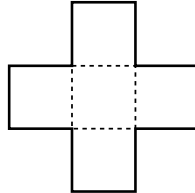
Answer: \_\_\_\_\_ cm

C. Find the perimeter of the whole figure in centimeters.

Answer: \_\_\_\_\_ cm

Item Number: M02227A

The figure consists of 5 squares of equal area. The area of the whole figure is  $245 \text{ cm}^2$ .



A. Find the area of one square.

Answer: \_\_\_\_\_  $\text{cm}^2$

B. Find the length of one side of one square.

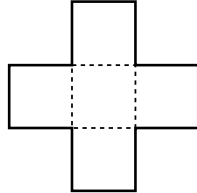
Answer: \_\_\_\_\_ cm

C. Find the perimeter of the whole figure in centimeters.

Answer: \_\_\_\_\_ cm

Item Number: M022227B

The figure consists of 5 squares of equal area. The area of the whole figure is  $245 \text{ cm}^2$ .



A. Find the area of one square.

Answer: \_\_\_\_\_  $\text{cm}^2$

B. Find the length of one side of one square.

Answer: \_\_\_\_\_ cm

C. Find the perimeter of the whole figure in centimeters.

Answer: \_\_\_\_\_ cm

Item Number: M022227C



In a car rally two checkpoints are 160 km apart. Drivers must travel from one checkpoint to the other in exactly 2.5 hours to earn maximum points.

A. What must the average speed be to travel the 160 km in this time?

Answer: \_\_\_\_\_

B. A driver took 1 hour to travel through a 40 km hilly section at the beginning of the course.

What must the average speed, in kilometers per hour, be for the remaining 120 km if the total time between checkpoints is to be 2.5 hours?

Answer: \_\_\_\_\_

Item Number: M032649A

In a car rally two checkpoints are 160 km apart. Drivers must travel from one checkpoint to the other in exactly 2.5 hours to earn maximum points.

A. What must the average speed be to travel the 160 km in this time?

Answer: \_\_\_\_\_

B. A driver took 1 hour to travel through a 40 km hilly section at the beginning of the course.

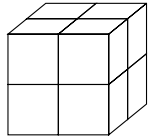
What must the average speed, in kilometers per hour, be for the remaining 120 km if the total time between checkpoints is to be 2.5 hours?

Answer: \_\_\_\_\_

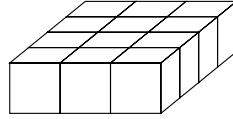
Item Number: M032649B

All the small blocks are the same size. Which stack of blocks has a different volume from the others?

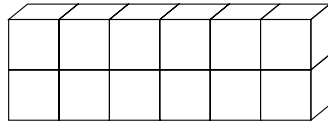
(A)



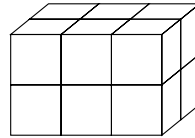
(B)



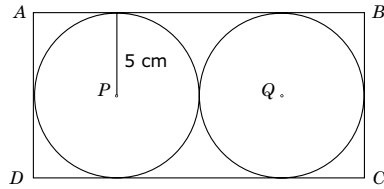
(C)



(D)



Item Number: M012013



In the figure above,  $ABCD$  is a rectangle, and circles  $P$  and  $Q$  each have a radius of 5 cm. What is the area of the rectangle?

- (A)  $50 \text{ cm}^2$
- (B)  $60 \text{ cm}^2$
- (C)  $100 \text{ cm}^2$
- (D)  $200 \text{ cm}^2$

Item Number: M032678

In which of these pairs of numbers is 2.25 larger than the first number but smaller than the second number?

Ⓐ 1 and 2

Ⓑ 2 and  $\frac{5}{2}$

Ⓒ  $\frac{5}{2}$  and  $\frac{11}{4}$

Ⓓ  $\frac{11}{4}$  and 3

Item Number: M012016

A scoop holds  $\frac{1}{5}$  kg of flour. How many scoops of flour are needed to fill a bag with 6 kg of flour?

Answer: \_\_\_\_\_

Item Number: M022156

$$\frac{3}{5} + \left( \frac{3}{10} \times \frac{4}{15} \right) =$$

(A)  $\frac{3}{51}$

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

(C)  $\frac{6}{25}$

(D)  $\frac{11}{25}$

(E)  $\frac{17}{25}$

Item Number: M022199

Two-thirds of the people present at the beginning of a meeting are men. Nobody leaves but 10 more men and 10 more women arrive at the meeting. Which of the following statements is true?

- Ⓐ There would then be more men than women at the meeting.
- Ⓑ There would then be the same number of men as there are women at the meeting.
- Ⓒ There would then be more women than men at the meeting.
- Ⓓ From the information given, you cannot tell whether there would be more women or men.

Item Number: M022191



What fraction of an hour has passed between 1:10 a.m. and 1:30 a.m.?

(A)  $\frac{1}{5}$

(B)  $\frac{1}{3}$

(C)  $\frac{1}{2}$

(D)  $\frac{2}{3}$

(E)  $\frac{3}{4}$

Item Number: M012027

In a group of children, 16 have birthdays during the first half of the year, and 14 have birthdays during the second half of the year. What fraction of the group have birthdays during the first half of the year?

(A)  $\frac{14}{30}$

(B)  $\frac{14}{16}$

(C)  $\frac{16}{14}$

(D)  $\frac{16}{30}$

(E)  $\frac{30}{16}$

Item Number: M012041

A teacher and a doctor each have 45 books. If  $\frac{4}{5}$  of the teacher's books and  $\frac{2}{3}$  of the doctor's books are novels, how many more novels does the teacher have than the doctor?

- (A) 2
- (B) 3
- (C) 6
- (D) 30
- (E) 36

Item Number: M022004

Alice ran a race in 49.86 seconds. Betty ran the same race in 52.30 seconds.  
How much longer did it take Betty to run the race than Alice?

- Ⓐ 2.44 seconds
- Ⓑ 2.54 seconds
- Ⓒ 3.56 seconds
- Ⓓ 3.76 seconds

Item Number: M022010

A car has a fuel tank that holds 45 L of fuel. The car consumes 8.5 L of fuel for each 100 km driven. A trip of 350 km was started with a full tank of fuel. How much remained in the tank at the end of the trip?

- Ⓐ 15.25 L
- Ⓑ 16.25 L
- Ⓒ 24.75 L
- Ⓓ 29.75 L

Item Number: M022127

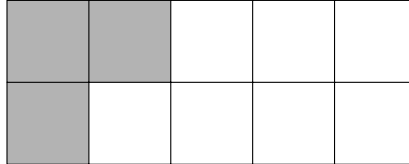
John and Cathy were told to divide a number by 100. By mistake John multiplied the number by 100 and obtained an answer of 450. Cathy correctly divided the number by 100. What was her answer?

- (A) 0.0045
- (B) 0.045
- (C) 0.45
- (D) 4.5

Item Number: M032079

In the figure, how many MORE small squares need to be shaded so that  $\frac{4}{5}$  of the small squares are shaded?

- (A) 5
- (B) 4
- (C) 3
- (D) 2
- (E) 1



Item Number: M012001

Write a fraction that is less than  $\frac{4}{9}$ .

Answer: \_\_\_\_\_

Item Number: M022012



Which of the following is 78.2437 rounded to the nearest hundredth?

- (A) 100
- (B) 80
- (C) 78.2
- (D) 78.24
- (E) 78.244

Item Number: M022144

In which list are the numbers ordered from greatest to least?

- (A) 0.233, 0.3, 0.32, 0.332
- (B) 0.3, 0.32, 0.332, 0.233
- (C) 0.32, 0.233, 0.332, 0.3
- (D) 0.332, 0.32, 0.3, 0.233

Item Number: M022198

Use the patterns in the previous table to answer the following questions.

- A. Pat made a shape with a **total** of 64 tiles. How many were black and how many were red?

Answer: \_\_\_\_\_ black tiles                      \_\_\_\_\_ red tiles

- B. Pat made a shape that used 49 **black** tiles.  
How many **red** tiles did Pat use in that shape?

Answer: \_\_\_\_\_ red tiles

- C. Next, Pat made a shape using 44 of the **red** tiles. How many black tiles would Pat need to complete the black part of the shape?

Answer: \_\_\_\_\_ black tiles

Item Number: M032670

What is the value of  $1 - 5 \times (-2)$ ?

- Ⓐ 11
- Ⓑ 8
- Ⓒ -8
- Ⓓ -9

Item Number: M032612

If  $n$  is a negative integer, which of these is the largest number?

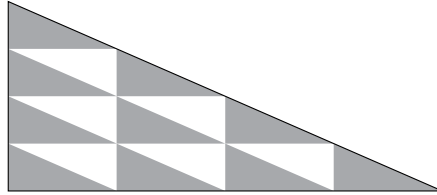
- (A)  $3 + n$
- (B)  $3 \times n$
- (C)  $3 - n$
- (D)  $3 \div n$

Item Number: M032643

When a new highway is built, the average time it takes a bus to travel from one town to another is reduced from 25 minutes to 20 minutes. What is the percent decrease in time taken to travel between the two towns?

- Ⓐ 4%
- Ⓑ 5%
- Ⓒ 20%
- Ⓓ 25%

Item Number: M022139



In the figure above, each of the smaller triangles has the same area. What is the ratio of the shaded area to the unshaded area?

- (A) 5:3
- (B) 8:5
- (C) 5:8
- (D) 3:5

Item Number: M032447

A computer club had 40 members, and 60% of the members were girls.  
Later, 10 boys joined the club. What percent of the members now are girls?  
Show the calculations that led to your answer.

Answer: \_\_\_\_\_

Item Number: M032233



Alice can run 4 laps around a track in the same time that Carol can run 3 laps. When Carol has run 12 laps, how many laps has Alice run?

- Ⓐ 9
- Ⓑ 11
- Ⓒ 13
- Ⓓ 16

Item Number: M012004

A shop increased its prices by 20%. What is the new price of an item which previously sold for 800 zeds?

- Ⓐ 640 zeds
- Ⓑ 900 zeds
- Ⓒ 960 zeds
- Ⓓ 1,000 zeds

Item Number: M032228

A machine uses 2.4 liters of gasoline for every 30 hours of operation.  
How many liters of gasoline will the machine use in 100 hours?

- Ⓐ 7.2
- Ⓑ 8.0
- Ⓒ 8.4
- Ⓓ 9.6

Item Number: M032533

Three brothers, Bob, Dan, and Mark, receive a gift of 45,000 zeds from their father. The money is shared between the brothers in proportion to the number of children each one has. Bob has 2 children, Dan has 3 children, and Mark has 4 children.

How many zeds does Mark get?

- Ⓐ 5,000
- Ⓑ 10,000
- Ⓒ 15,000
- Ⓓ 20,000

Item Number: M032727

At a play,  $\frac{3}{25}$  of the people in the audience were children.

What percent of the audience was this?

- (A) 12%
- (B) 3%
- (C) 0.3%
- (D) 0.12%

Item Number: M032570

Which of these is closest to  $11^2 + 9^2$ ?

- Ⓐ  $20 + 20$
- Ⓑ  $20 + 80$
- Ⓒ  $120 + 20$
- Ⓓ  $120 + 80$

Item Number: M032609

Which of these is equal to  $370 \times 998 + 370 \times 2$ ?

- (A)  $370 \times 1,000$
- (B)  $372 \times 998$
- (C)  $740 \times 998$
- (D)  $370 \times 998 \times 2$

Item Number: M032690

9	1	4	5
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The four digits above are to be arranged from largest to smallest to form a four-digit number. The same four digits are then to be arranged from smallest to largest to form another four-digit number. What is the difference between the two resulting four-digit numbers?

- (A) 3,726
- (B) 4,726
- (C) 8,082
- (D) 8,182
- (E) 8,192

Item Number: M012028



About 7,000 copies of a magazine are sold each week. Approximately how many magazines are sold each year?

- (A) 8,400
- (B) 35,000
- (C) 84,000
- (D) 350,000
- (E) 3,500,000

Item Number: M022194

The teachers at Parkway School plan to send 6 newsletters per year to each of the 620 families with children at the school. The newsletters each need 2 sheets of paper. The paper is sold in packs of 500 sheets.

What is the least number of packs of paper needed to print the school newsletter for the year?

Answer: \_\_\_\_\_

Item Number: M032652

A garden has 14 rows. Each row has 20 plants. The gardener then plants 6 more rows with 20 plants in each row.

How many plants are now there altogether?

Answer: \_\_\_\_\_

Item Number: M032671

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