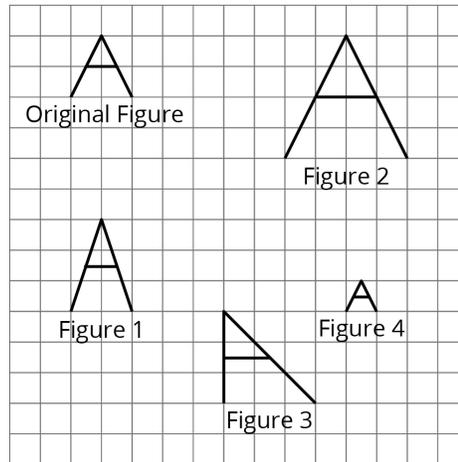


Scale Drawings

Lesson 1

Problem 1

Here is a figure that looks like the letter A, along with several other figures. Which figures are scaled copies of the original A? Explain how you know.



Solution

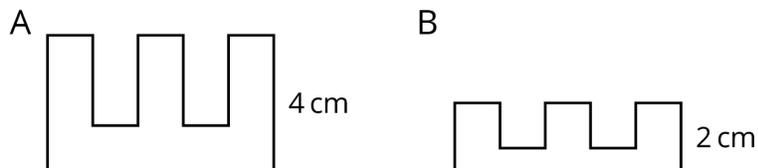
Figures 2 and 4 are scaled copies. Sample explanations:

- The original A fits inside a square. The horizontal segment is halfway up the height of the square. The tip of the A is at the midpoint of the horizontal side of the square.
- Figure 1 inside a rectangle, not a square, so it is not a scaled copy. Figure 3 fits inside a square but the shape is different than the original letter A, since one of the legs of the A in Figure 3 is now vertical, so it also is not a scaled copy.
- Figure 2 is twice as high and twice as wide as the original A, and Figure 4 is half as tall and as wide, but in both figures the locations of the horizontal segment and the tip of the letter A still match the original.

Problem 2

Tyler says that Figure B is a scaled copy of Figure A because all of the peaks are half as tall.

Do you agree with Tyler? Explain your reasoning.



Solution

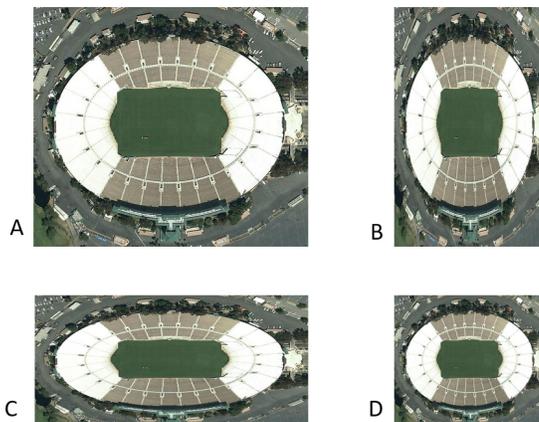
No. For the smaller figure to be a scaled copy, the figure would have to be half as wide as well.

Problem 3

Here is a picture of the Rose Bowl Stadium in Pasadena, CA.



Here are some copies of the picture. Select **all** the pictures that are scaled copies of the original picture.



Solution

A and D. B is compressed horizontally, and C is compressed vertically.

Problem 4

Complete each equation with a number that makes it true.

1. $5 \cdot \underline{\hspace{1cm}} = 15$

2. $4 \cdot \underline{\hspace{1cm}} = 32$

3. $6 \cdot \underline{\hspace{1cm}} = 9$

4. $12 \cdot \underline{\hspace{1cm}} = 3$

Solution

1. 3

2. 8

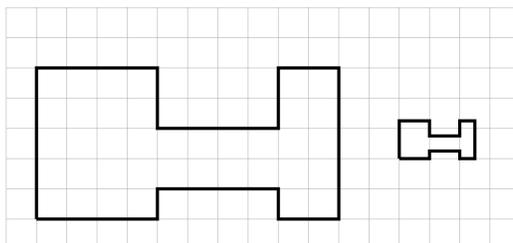
3. 1.5, $\frac{3}{2}$, or equivalent

4. 0.25, $\frac{1}{4}$, or equivalent

Lesson 2

Problem 1

The second H-shaped polygon is a scaled copy of the first.

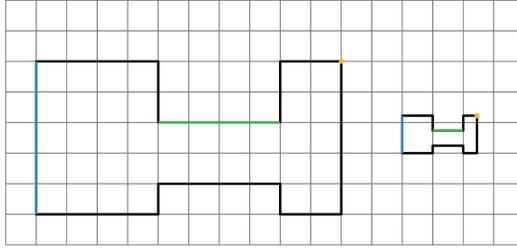


1. Show one pair of corresponding points and two pairs of corresponding sides in the original polygon and its copy. Consider using colored pencils to highlight corresponding parts or labeling some of the vertices.

2. What scale factor takes the original polygon to its smaller copy? Explain or show your reasoning.

Solution

1. Answers vary. Sample markings:



2. $\frac{1}{4}$ or 0.25. Sample explanation: The sides that are 4 units long in the original polygon are 1 unit long in the copy, which is one fourth of the original length.

Problem 2

Figure B is a scaled copy of Figure A. Select **all** of the statements that must be true:

- A. Figure B is larger than Figure A.
- B. Figure B has the same number of edges as Figure A.
- C. Figure B has the same perimeter as Figure A.
- D. Figure B has the same number of angles as Figure A.
- E. Figure B has angles with the same measures as Figure A.

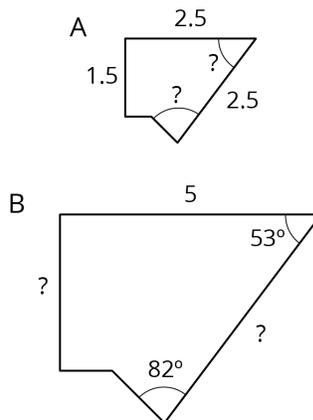
Solution

B, D, E

Problem 3

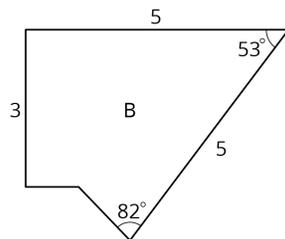
Polygon B is a scaled copy of Polygon A.

1. What is the scale factor from Polygon A to Polygon B? Explain your reasoning.
2. Find the missing length of each side marked with ? in Polygon B.
3. Determine the measure of each angle marked with ? in Polygon A.

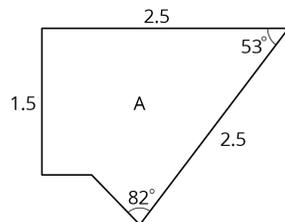


Solution

1. 2 because the top horizontal side has length 2.5 units in Polygon A and 5 units in Polygon B
2. All sides scale by the same factor of 2, so the side that is 2.5 units in Polygon A is 5 units in the copy, and the 1.5-unit-long one is 3 units in the copy



3. 53° and 82° because scaled copies have the same corresponding angles



Problem 4

Complete each equation with a number that makes it true.

1. $8 \cdot \underline{\hspace{2cm}} = 40$

2. $8 + \underline{\hspace{2cm}} = 40$

3. $21 \div \underline{\hspace{2cm}} = 7$

4. $21 - \underline{\hspace{2cm}} = 7$

5. $21 \cdot \underline{\hspace{2cm}} = 7$

Solution

1. 5

2. 32

3. 3

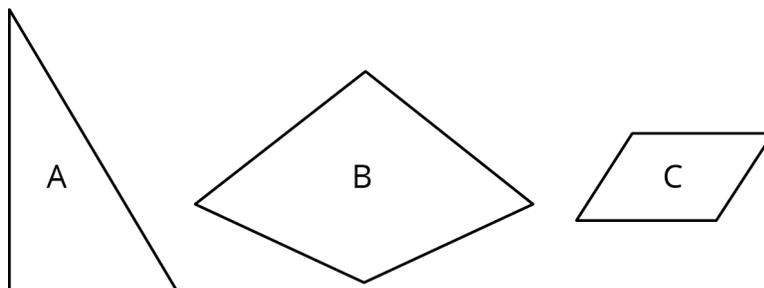
4. 14

5. $\frac{1}{3}$

Lesson 3

Problem 1

Here are 3 polygons.



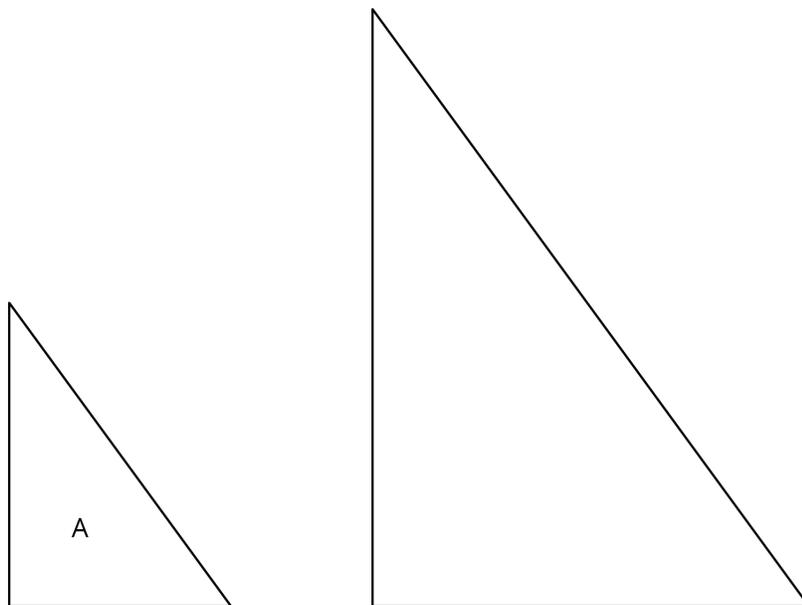
Draw a scaled copy of Polygon A using a scale factor of 2.

Draw a scaled copy of Polygon B using a scale factor of $\frac{1}{2}$.

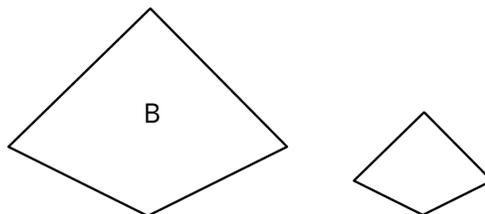
Draw a scaled copy of Polygon C using a scale factor of $\frac{3}{2}$.

Solution

1.



2.



3.

**Problem 2**

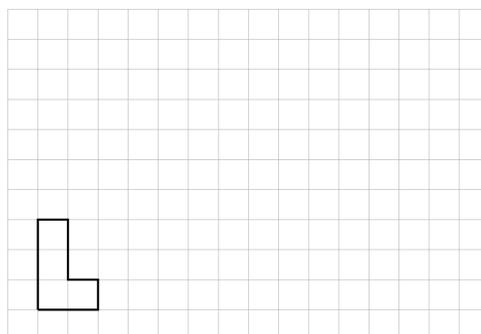
Quadrilateral A has side lengths 6, 9, 9, and 12. Quadrilateral B is a scaled copy of Quadrilateral A, with its shortest side of length 2. What is the perimeter of Quadrilateral B?

Solution

The scale factor is $\frac{1}{3}$, so the side lengths of Quadrilateral B are 2, 3, 3, and 4. Summing these four numbers gives the perimeter of 12.

Problem 3

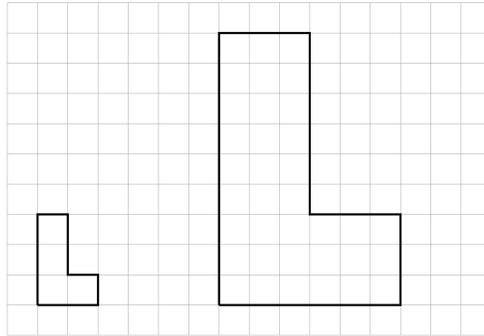
Here is a polygon on a grid.



Draw a scaled copy of this polygon that has a perimeter of 30 units. What is the scale factor? Explain how you know.

Solution

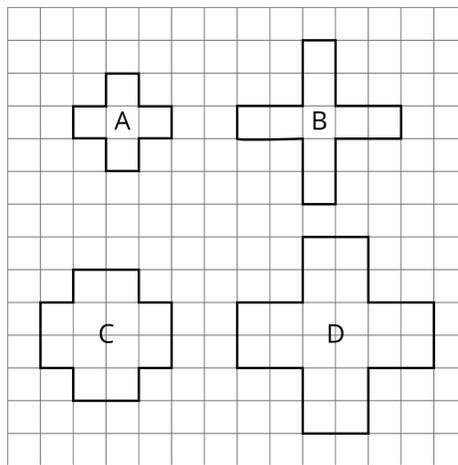
The perimeter of the original polygon is 10 units. Since the perimeter of a scaled copy is multiplied by the scale factor, a scale factor of 3 needs to be applied to get a copy with a perimeter of 30.



Problem 4

(from Unit 1, Lesson 1)

Priya and Tyler are discussing the figures shown below. Priya thinks that B, C, and D are scaled copies of A. Tyler says B and D are scaled copies of A. Do you agree with Priya, or do you agree with Tyler? Explain your reasoning.



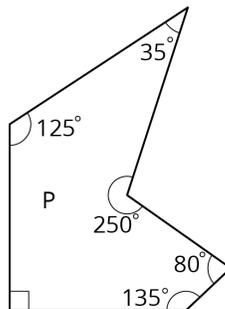
Solution

Answers vary. Sample response: I agree with neither one. Only D is a scaled copy of A. In D, the length of each segment of the plus sign is twice the matching segments in A. In B and C, some segments are double the matching lengths in A but some are not.

Lesson 4

Problem 1

Select **all** the statements that must be true for *any* scaled copy Q of Polygon P.



- A. The side lengths are all whole numbers.
- B. The angle measures are all whole numbers.
- C. Q has exactly 1 right angle.

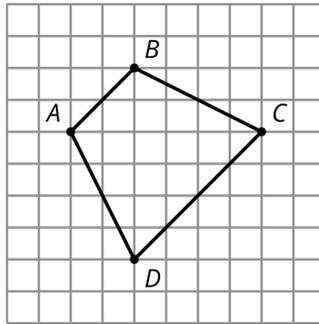
- D. If the scale factor between P and Q is $\frac{1}{5}$, then each side length of P is multiplied by $\frac{1}{5}$ to get the corresponding side length of Q.
- E. If the scale factor is 2, each angle in P is multiplied by 2 to get the corresponding angle in Q.
- F. Q has 2 acute angles and 3 obtuse angles.

Solution

B, C, D, F

Problem 2

Here is Quadrilateral $ABCD$.



Quadrilateral $PQRS$ is a scaled copy of Quadrilateral $ABCD$. Point P corresponds to A , Q to B , R to C , and S to D .

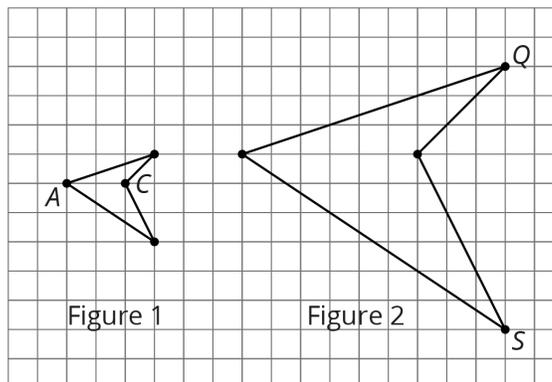
If the distance from P to R is 3 units, what is the distance from Q to S ? Explain your reasoning.

Solution

Since the lengths of AC and BD are 6, and AC corresponds to PR , the scale factor must be $\frac{1}{2}$. Since QS corresponds to BD , QS must also be 3 units long.

Problem 3

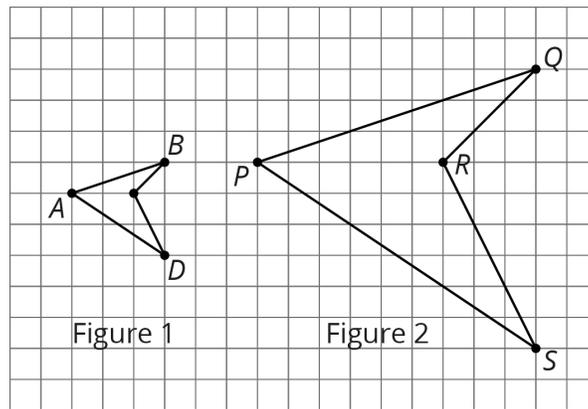
Figure 2 is a scaled copy of Figure 1.



1. Identify the points in Figure 2 that correspond to the points A and C in Figure 1. Label them P and R . What is the distance between P and R ?
2. Identify the points in Figure 1 that correspond to the points Q and S in Figure 2. Label them B and D . What is the distance between B and D ?
3. What is the scale factor that takes Figure 1 to Figure 2?
4. G and H are two points on Figure 1, but they are not shown. The distance between G and H is 1. What is the distance between the corresponding points on Figure 2?

Solution

- 1.



6 units

2. 3 units

3. 3 because distances between points in Figure 2 are three times the corresponding distances in Figure 1

4. 3 units because the scale factor is 3

Problem 4

(from Grade 7, Unit 2, Lesson 4)

To make 1 batch of lavender paint, the ratio of cups of pink paint to cups of blue paint is 6 to 5. Find two more ratios of cups of pink paint to cups of blue paint that are equivalent to this ratio.

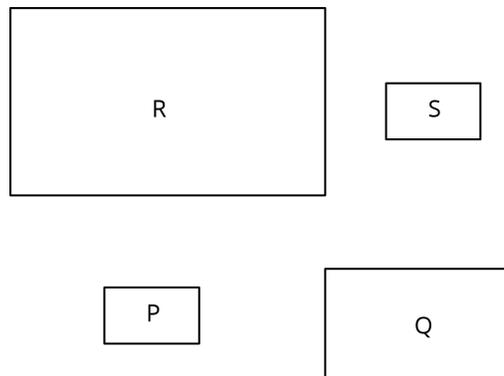
Solution

Answers vary. Sample response: 12 cups of pink paint to 10 cups of blue paint and 18 cups of pink paint to 15 cups of blue paint. This is 2 batches and 3 batches, respectively, of this shade of lavender paint.

Lesson 5

Problem 1

Rectangles P, Q, R, and S are scaled copies of one another. For each pair, decide if the scale factor from one to the other is greater than 1, equal to 1, or less than 1.



1. from P to Q
2. from P to R
3. from Q to S
4. from Q to R
5. from S to P
6. from R to P
7. from P to S

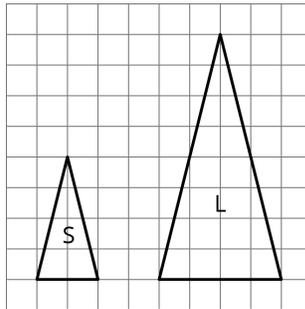
Solution

1. Greater than 1
2. Greater than 1
3. Less than 1
4. Greater than 1
5. Equal to 1
6. Less than 1
7. Equal to 1

Problem 2

Triangle S and Triangle L are scaled copies of one another.

1. What is the scale factor from S to L?
2. What is the scale factor from L to S?
3. Triangle M is also a scaled copy of S. The scale factor from S to M is $\frac{3}{2}$. What is the scale factor from M to S?

**Solution**

1. 2
2. $\frac{1}{2}$
3. $\frac{2}{3}$. The two scale factors are reciprocals of each other.

Problem 3

Are two squares with the same side lengths scaled copies of one another? Explain your reasoning.

Solution

Yes. There is a scale factor of 1 between them.

Problem 4

(from Unit 1, Lesson 2)

Quadrilateral A has side lengths 2, 3, 5, and 6. Quadrilateral B has side lengths 4, 5, 8, and 10. Could one of the quadrilaterals be a scaled copy of the other? Explain.

Solution

No. For the shortest sides to match up, the scale factor from A to B would have to be 2. But scaling the side of A with length 3 by a factor of 2 would give a side of length 6, which doesn't match any of the side lengths of B.

Problem 5

(from Grade 7, Unit 2, Lesson 5)

Select **all** the ratios that are equivalent to the ratio 12 : 3. Explain how you know.

- A. 6 : 1
- B. 1 : 4
- C. 4 : 1
- D. 24 : 6
- E. 15 : 6
- F. 1,200 : 300
- G. 112 : 13

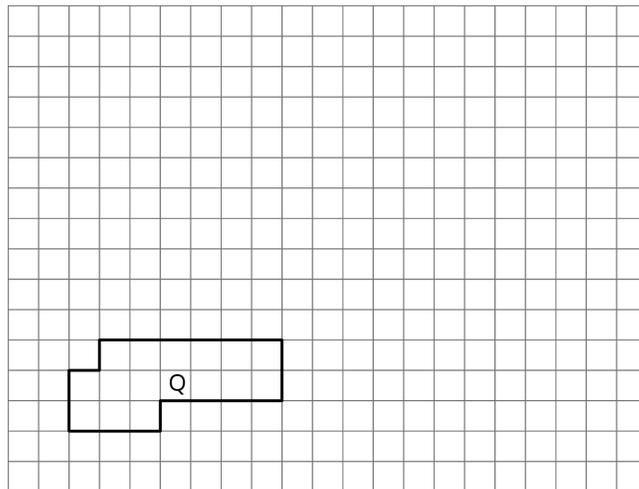
Solution

C, D, and F. For C, $3 \cdot 4 = 12$ and $3 \cdot 1 = 3$. For D, $2 \cdot 12 = 24$ and $2 \cdot 3 = 6$. For F, $100 \cdot 12 = 1,200$ and $100 \cdot 3 = 300$. For A, B, E, and G, there is no number I can multiply 12 and 3 by to get this pair of numbers.

Lesson 6

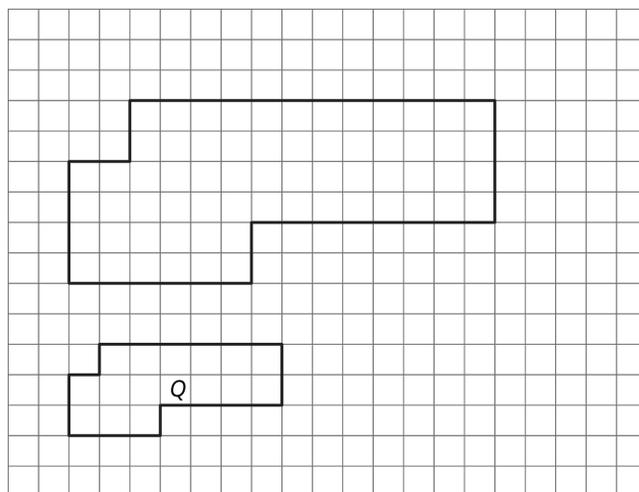
Problem 1

On the grid, draw a scaled copy of Polygon Q using a scale factor of 2. Compare the perimeter and area of the new polygon to those of Q.



Solution

The perimeter of Q is 20 units, and the area of Q is 16 square units. The perimeter of the scaled copy is 40 units, and its area is 64 square units. The perimeter is multiplied by the scale factor of 2, and the area is multiplied by the square of the scale factor, which is 4.



Problem 2

A right triangle has an area of 36 square units.

If you draw scaled copies of this triangle using the scale factors in the table, what will the areas of these scaled copies be? Explain or show your reasoning.

scale factor	area (units ²)
1	36
2	
3	
5	
$\frac{1}{2}$	
$\frac{2}{3}$	

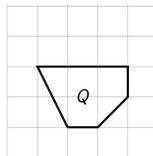
Solution

The area of each scaled triangle is the same as the area of the original triangle (36 square units) multiplied by the square of the scale factor:

scale factor	area (units ²)
1	36
2	144
3	324
5	900
$\frac{1}{2}$	9
$\frac{2}{3}$	16

Problem 3

Diego drew a scaled version of a Polygon P and labeled it Q.



If the area of Polygon P is 72 square units, what scale factor did Diego use to go from P to Q? Explain your reasoning.

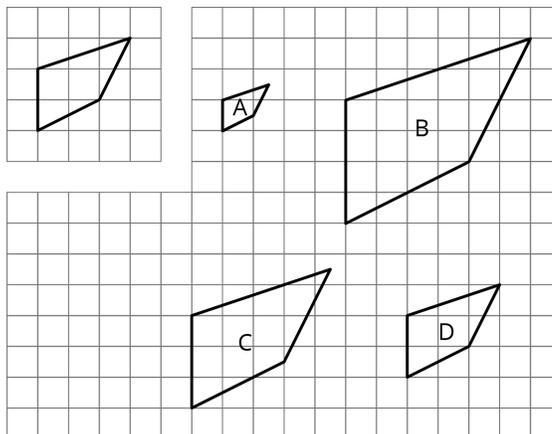
Solution

$\frac{1}{4}$. The area of Q is 4.5 square units (3 whole square units, one 2 unit by 1 unit right triangle, and one 1 unit by 1 unit right triangle). This area is $\frac{1}{16}$ of the area of P. This means the scale factor is $\frac{1}{4}$ because $\frac{1}{4} \cdot \frac{1}{4} = \frac{1}{16}$.

Problem 4

(from Unit 1, Lesson 2)

Here is an unlabeled polygon, along with its scaled copies Polygons A–D. For each copy, determine the scale factor. Explain how you know.



Solution

1. $\frac{1}{2}$ because the vertical side on the copy is $\frac{1}{2}$ the length of the vertical side on the original

2. 2 because the vertical side on the copy is twice the length of the vertical side on the original

3. $\frac{3}{2}$ because the vertical side on the copy is $\frac{3}{2}$ the length of the vertical side on the original

4. 1 because the original and the copy have the same size

Problem 5

(from Unit 1, Lesson 5)

Solve each equation mentally.

1. $\frac{1}{7} \cdot x = 1$

2. $x \cdot \frac{1}{11} = 1$

3. $1 \div \frac{1}{5} = x$

Solution

1. $x = 7$

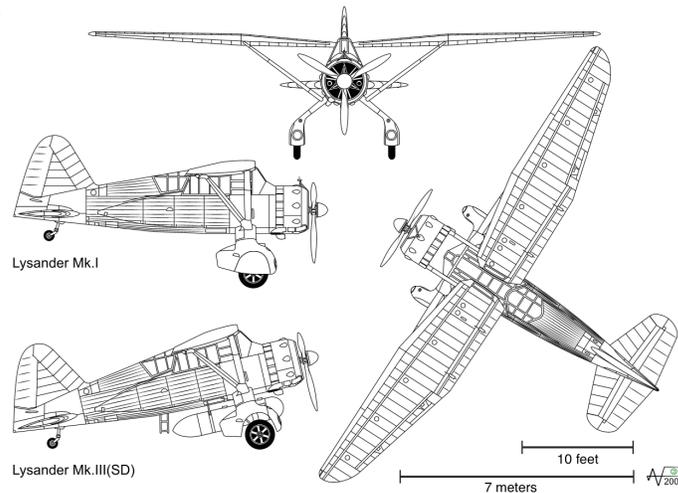
2. $x = 11$

3. $x = 5$

Lesson 7

Problem 1

The Westland Lysander was an aircraft used by the Royal Air Force in the 1930s. Here are some scale drawings that show the top, side, and front views of the Lysander.



Use the scales and scale drawings to approximate the actual lengths of:

1. the wingspan of the plane, to the nearest foot
2. the height of the plane, to the nearest foot
3. the length of the Lysander Mk. I, to the nearest meter

Solution

1. 46 feet
2. 12 feet
3. 9 meters

Problem 2

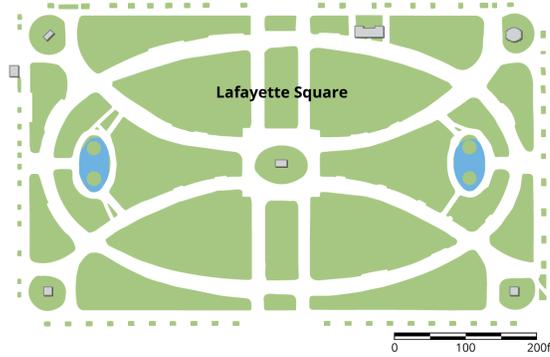
A blueprint for a building includes a rectangular room that measures 3 inches long and 5.5 inches wide. The scale for the blueprint says that 1 inch on the blueprint is equivalent to 10 feet in the actual building. What are the dimensions of this rectangular room in the actual building?

Solution

30 feet long and 55 feet wide

Problem 3

Here is a scale map of Lafayette Square, a rectangular garden north of the White House.



1. The scale is shown in the lower right corner. Find the actual side lengths of Lafayette Square in feet.
2. Use an inch ruler to measure the line segment of the graphic scale. About how many feet does one inch represent on this map?

Solution

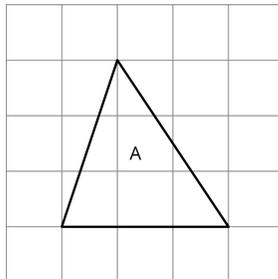
1. About 800 ft by 500 ft
2. Answers vary depending on the size of printed scale. Sample response: 1 in represents 300 feet.

Problem 4

(from Unit 1, Lesson 6)

Here is Triangle A. Lin created a scaled copy of Triangle A with an area of 72 square units.

1. How many times larger is the area of the scaled copy compared to that of Triangle A?
2. What scale factor did Lin apply to the Triangle A to create the copy?
3. What is the length of bottom side of the scaled copy?



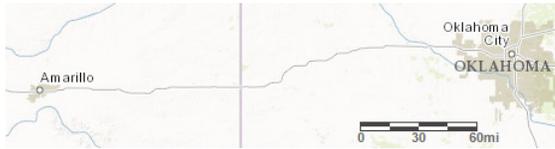
Solution

1. 16 times larger ($72 \div 4.5 = 16$)
2. 4
3. 12 units

Lesson 8

Problem 1

Here is a map that shows parts of Texas and Oklahoma.



1. About how far is it from Amarillo to Oklahoma City? Explain your reasoning.
2. Driving at a constant speed of 70 mph, will it be possible to make this trip in 3 hours? Explain how you know.

Solution

1. About 260 miles (but the road is not straight, so it is hard to tell the exact distance from the map)
2. No, a traveler can only go 210 miles in 3 hours, and the distance between the cities is definitely farther than that.

Problem 2

A local park is in the shape of a square. A map of the local park is made with the scale 1 inch to 200 feet.

1. If the park is shown as a square on the map, each side of which is one foot long, how long is each side of the square park?
2. If a straight path in the park is 900 feet long, how long would the path be when represented on the map?

Solution

1. 2,400 feet
2. 4.5 inches

Lesson 9

Problem 1

An image of a book shown on a website is 1.5 inches wide and 3 inches tall on a computer monitor. The actual book is 9 inches wide.

1. What scale is being used for the image?
2. How tall is the actual book?

Solution

1. 1 inch to 6 inches
2. 18 inches

Problem 2

The flag of Colombia is a rectangle that is 6 ft long with three horizontal strips.



- The top stripe is 2 ft tall and is yellow.
 - The middle stripe is 1 ft tall and is blue.
 - The bottom stripe is also 1 ft tall and is red.
1. Create a scale drawing of the Colombian flag with a scale of 1 cm to 2 ft.
 2. Create a scale drawing of the Colombian flag with a scale of 2 cm to 1 ft.

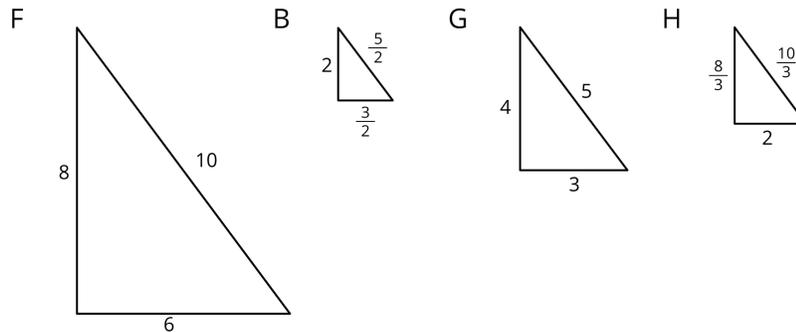
Solution

- The flag will be 3 cm long and 2 cm tall. The yellow rectangle is 1 cm tall and the red and blue rectangles are each 0.5 cm tall.
- The flag will be 12 cm long and 8 cm tall. The yellow rectangle is 4 cm tall and the red and blue rectangles are each 2 cm tall.

Problem 3

(from Unit 1, Lesson 6)

These triangles are scaled copies of each other.



For each pair of triangles listed, the area of the second triangle is how many times larger than the area of the first?

- Triangle G and Triangle F
- Triangle G and Triangle B
- Triangle B and Triangle F
- Triangle F and Triangle H
- Triangle G and Triangle H
- Triangle H and Triangle B

Solution

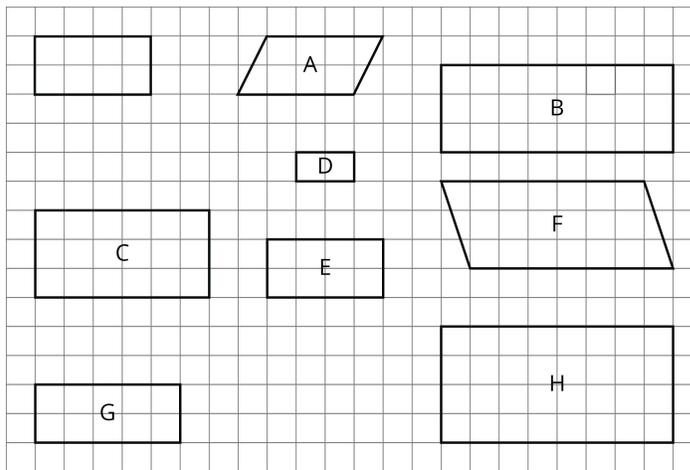
- 4
- $\frac{1}{4}$
- 16
- $\frac{1}{9}$
- $\frac{4}{9}$
- $\frac{9}{16}$

Problem 4

(from Unit 1, Lesson 3)

Here is an unlabeled rectangle, followed by other quadrilaterals that are labeled.

- Select **all** quadrilaterals that are scaled copies of the unlabeled rectangle. Explain how you know.

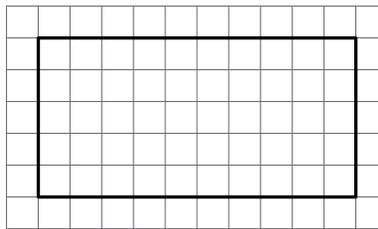


2. On graph paper, draw a different scaled version of the original rectangle.

Solution

1. C, D, E, and H. Sample explanation: The length and width of each copy is related to the length and width of the original by the same factor and the corresponding angles are unchanged.

2. Drawings vary. Sample response:



Lesson 10

Problem 1

Here is a scale drawing of a swimming pool where 1 cm represents 1 m.



1. How long and how wide is the actual swimming pool?
2. Will a scale drawing where 1 cm represents 2 m be larger or smaller than this drawing?
3. Make a scale drawing of the swimming pool where 1 cm represents 2 m.

Solution

1. Answers vary. Sample response: The scale drawing is 10 cm long and 5 cm wide so the actual swimming pool is 10 m long and 5 m wide.
2. It will be smaller. Each centimeter will represent a larger distance so it will take fewer centimeters to represent the width and length of the swimming pool.
3. Answers vary. Sample response: The length and width will each be half as long as the given scale drawing. So the new scale drawing of the swimming pool will be 5 cm long and 2.5 cm wide.

Problem 2

A map of a park has a scale of 1 inch to 1,000 feet. Another map of the same park has a scale of 1 inch to 500 feet. Which map is larger? Explain or show your reasoning.

Solution

The map with a scale of 1 inch to 500 feet. It takes twice the number of units on this map to represent the same actual distance covered by the other map. For example, on the 1 inch to 1,000 feet map, it takes 1 inch to represent 1,000 feet in the actual park. On the 1 inch to 500 feet map, it takes 2 inches to represent the same 1,000 feet in the park.

Problem 3

On a map with a scale of 1 inch to 12 feet, the area of a restaurant is 60 in^2 . Han says that the actual area of the restaurant is 720 ft^2 . Do you agree or disagree? Explain your reasoning.

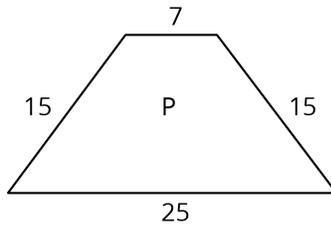
Solution

I disagree. Sample reasoning: At the scale of 1 inch to 12 feet, every 1 square inch represents 144 square feet, since $12 \cdot 12 = 144$. The actual area of the restaurant should be 8,640 square feet, because $60 \cdot 144 = 8,640$.

Problem 4

(from Unit 1, Lesson 3)

If Quadrilateral Q is a scaled copy of Quadrilateral P created with a scale factor of 3, what is the perimeter of Q?



Solution

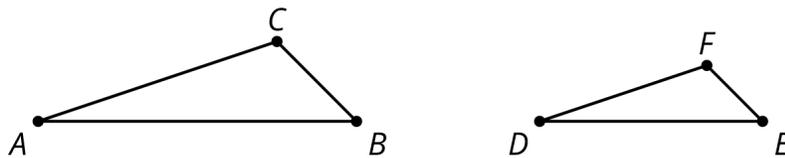
186

Problem 5

(from Unit 1, Lesson 2)

Triangle DEF is a scaled copy of triangle ABC . For each of the following parts of triangle ABC , identify the corresponding part of triangle DEF .

- angle ABC
- angle BCA
- segment AC
- segment BA



Solution

- angle DEF
- angle EFD
- segment DF
- segment ED

Lesson 11

Problem 1

A scale drawing of a car is presented in the following three scales. Order the scale drawings from smallest to largest. Explain your reasoning. (There are about 1.1 yards in a meter, and 2.54 cm in an inch.)

1. 1 in to 1 ft
2. 1 in to 1 m
3. 1 in to 1 yd

Solution

b, c, a. Explanations vary. Sample responses:

- Of the three units, 1 ft is the smallest unit, and 1 m is the largest. Therefore, a drawing with scale 1 in to 1 ft will require the most number units (the largest), and a drawing with scale 1 in to 1 m will require the least (the smallest).
- Each scale was converted into a scale without units. 1 in to 1 ft is equivalent to 1 to 12. 1 in to 1 m is equivalent to 2.54 cm to 100 cm, which is roughly 1 to 39. And 1 in to 1 yd is equivalent to 1 to 36.

Problem 2

Which scales are equivalent to 1 inch to 1 foot? Select **all** that apply.

- A. 1 to 12
- B. $\frac{1}{12}$ to 1
- C. 100 to 0.12
- D. 5 to 60
- E. 36 to 3
- F. 9 to 108

Solution

A, B, D, F

Problem 3

A model airplane is built at a scale of 1 to 72. If the model plane is 8 inches long, how many feet long is the actual airplane?

Solution

48 feet. The actual airplane is 72 times the length of the model. $8 \cdot 72 = 576$. 576 inches is 48 feet, as $576 \div 12 = 48$.

Problem 4

(from Unit 1, Lesson 3)

Quadrilateral A has side lengths 3, 6, 6, and 9. Quadrilateral B is a scaled copy of A with a shortest side length equal to 2. Jada says, "Since the side lengths go down by 1 in this scaling, the perimeter goes down by 4 in total." Do you agree with Jada? Explain your reasoning.

Solution

No. The side lengths of B are not each 1 less than those of A. The side lengths of B are $\frac{2}{3}$ of those of A, so they must be 2, 4, 4, and 6. The perimeter of A is 24 and the perimeter of B is 16, which is 8 less in total.

Problem 5

(from Unit 1, Lesson 6)

Polygon B is a scaled copy of Polygon A using a scale factor of 5. Polygon A's area is what fraction of Polygon B's area?

Solution

$$\frac{1}{25}$$

Problem 6

(from Unit 1, Lesson 5)

Figures R, S, and T are all scaled copies of one another. Figure S is a scaled copy of R using a scale factor of 3. Figure T is a scaled copy of S using a scale factor of 2. Find the scale factors for each of the following:

1. From T to S

2. From S to R
3. From R to T
4. From T to R

Solution

1. $\frac{1}{2}$
2. $\frac{1}{3}$
3. 6
4. $\frac{1}{6}$

Lesson 12

Problem 1

The Empire State Building in New York City is about 1,450 feet high (including the antenna at the top) and 400 feet wide. Andre wants to make a scale drawing of the front view of the Empire State Building on an $8\frac{1}{2}$ -inch-by-11-inch piece of paper. Select a scale that you think is the most appropriate for the scale drawing. Explain your reasoning.

1. 1 inch to 1 foot
2. 1 inch to 100 feet
3. 1 inch to 1 mile
4. 1 centimeter to 1 meter
5. 1 centimeter to 50 meters
6. 1 centimeter to 1 kilometer

Solution

E, or 1 cm to 50 m, would be most appropriate. Explanations vary. Sample explanation: With A, B, and D, the scaled image will not fit on the page. For C and F, the image will be too small. Option E is just right because at 1 cm to 50 m, the height of the building is about 10 cm, and the width is about 3 cm.

Problem 2

Elena finds that the area of a house on a scale drawing is 25 square inches. The actual area of the house is 2,025 square feet. What is the scale of the drawing?

Solution

1 inch to 9 feet

Problem 3

Which of these scales are equivalent to 3 cm to 4 km? Select **all** that apply. Recall that 1 inch is 2.54 centimeters.

- A. 0.75 cm to 1 km
- B. 1 cm to 12 km
- C. 6 mm to 2 km
- D. 0.3 mm to 40 m
- E. 1 inch to 7.62 km

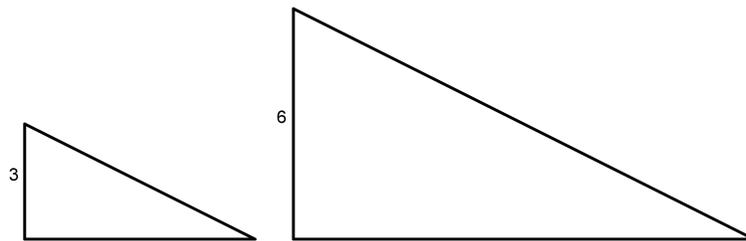
Solution

A, D

Problem 4

(from Unit 1, Lesson 6)

These two triangles are scaled copies of one another. The area of the smaller triangle is 9 square units. What is the area of the larger triangle? Explain or show how you know.



Solution

36 square units. When the lengths of a scaled copy are 2 times those of the original figure, the area of the copy is 4 times that of the original area: $4 \cdot 9 = 36$.

Problem 5

(from Grade 7, Unit 2, Lesson 8)

Water costs \$1.25 per bottle. At this rate, what is the cost of:

1. 10 bottles?
2. 20 bottles?
3. 50 bottles?

Solution

1. \$12.50 (because $10 \cdot 1.25 = 12.5$)
2. \$25 (because $20 \cdot 1.25 = 25$)
3. \$62.50 (because $50 \cdot 1.25 = 62.5$)

Problem 6

(from Grade 7, Unit 2, Lesson 11)

The first row of the table shows the amount of dish detergent and water needed to make a soap solution.

1. Complete the table for 2, 3, and 4 batches.
2. How much water and detergent is needed for 8 batches? Explain your reasoning.

number of batches	cups of water	cups of detergent
1	6	1
2		
3		
4		

Solution

- 1.

number of batches	cups of water	cups of detergent
1	6	1
2	12	2
3	18	3
4	24	4

2. 48 cups of water and 8 cups of dish detergent. Explanations vary. Sample response: 8 batches is 2 times 4 batches. Doubling 24 gives 48 and doubling 4 gives 8.

