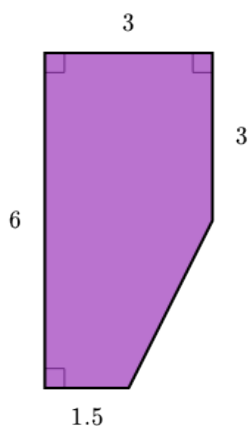# Composing and Decomposing Shapes 1
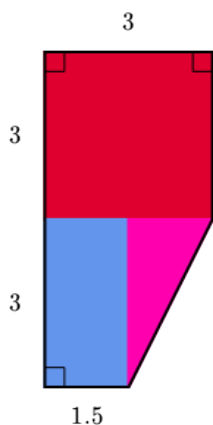
October 15, 2013

1   x00ceb76b3c63886f

William is cutting the grass. The picture below, which is measured in acres, represents the area that she has cut.

How many square acres of grass has William cut?

Ans   [[? input-number 1]] acres^2 7

Hint 1   This shape is made up of a square at the top, a rectangle on the left side, and a triangle on the right side.

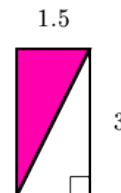

We know the square at the top of the shape has a side length of 3 acres.

Area $= 3 \cdot 3 = 9$ acres^2

We know the rectangle on the left side has a length of 3 acres and a width of 1.5 acres.

Area $= 3 \cdot 1.5 = 4.5$ acres^2

The triangle on the right side is one-half of another rectangle:

$$\text{Area} = \frac{1}{2} \cdot 3 \cdot 1.5 = \frac{1}{2} \cdot 4.5 \text{ acres}^2 = 2.25 \text{ acres}^2$$

Hint 2   To find the total area of the shape, we can combine the three areas we found:

$9 + 4.5 + 2.25 = 7$

The area of this figure is 15.75 square acres.

Hint 3   William has cut 15.75 acres^2 in total.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
**Version:** 1e4ed40a.. 2013-10-11

2   x1360b3084d511d3f

Matthew drew a picture of his house on construction paper. He needs 6 figures exactly the same size and shape as the house, which is measured in inches. **Using the model below, how many square inches of paper will his 6 figures measure in total?**
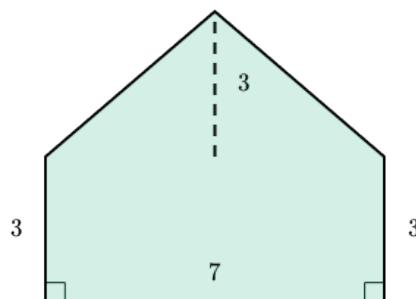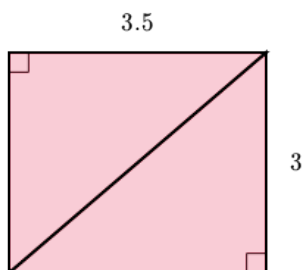
Ans [[? input-number 1]] in² 189

Hint 1 This shape is made up of a rectangle with a triangle on the top.
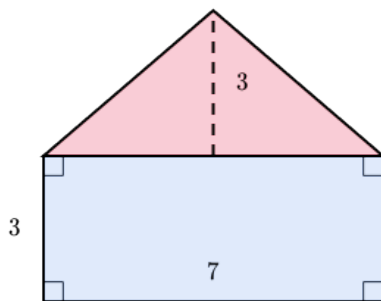
We know the rectangle is 7 inches long and 3 inches wide.

Area $= 7 \cdot 3 = 21$ in²

The triangle on the top can be divided into two right triangles and then combined to form a rectangle.

Area $= 3.5 \cdot 3 = 10.5$ in²

Hint 2 To find the total area of the shape, we can combine the two areas we found:

$21 + 10.5 = 31.5$

Hint 3 The area of one figure is 31.5 square inches. We need 6 of these figures.

$31.5 \cdot 6 = 189$ in²

Hint 4 The area of the figure is 189 in²

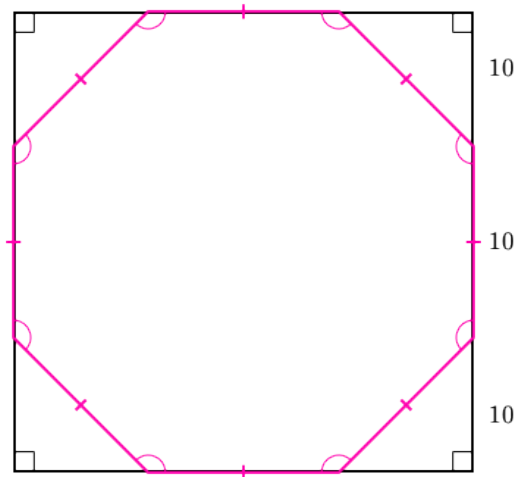**Tags:** CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
Version: f3a2ecde.. 2013-10-06

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3   x1c6e2f705d8cdae4

Tom and Jerry have a wrestling ring in their backyard. Their ring is an octagon- an eight sided figure- enclosed in a square fence. In the drawing below, the sides are in feet. **What is the area of the octagon?**
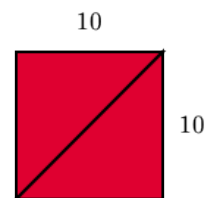

Ans [[? input-number 1]] ft² 700

Hint 1 We know the square is 30 feet long and 30 feet wide. Area $= 30 \cdot 30 = 900$ ft²

Hint 2 We have 4 right triangles that are the same size and shape.

We can combine two right triangles to form another square:

Area $= 10 \cdot 10 = 100$ ft²

Since we have 2 more triangles, we can make another square, so we need to multiply the area of this square by 2.

$2 \cdot 100 = 200$ ft²

The area of the four triangles combined is 200 ft².

Hint 3 If we subtract the combined area of the triangles from the area of the square, we will find the area of the octagon.

$900 \text{ ft}^2 - 200 \text{ ft}^2 = 700 \text{ ft}^2$

**Hint 4** The area of the octagon is 700 ft².

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
**Version:** 3131a505.. 2013-10-07

4 x3748626441dc2c4c

Carl is making a poster for a pep rally. He needs to create 8 figures exactly the same size and shape as the figure below, which is measured in inches.

How many square inches of paper will his figures measure in total?

10.5

3.5
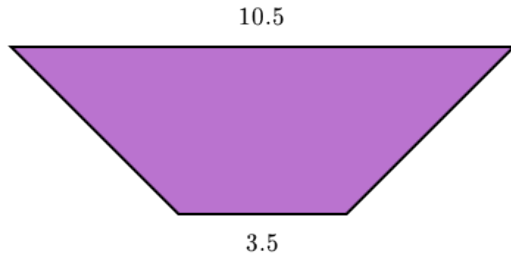
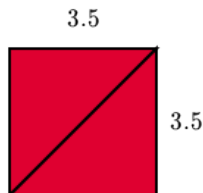**Ans** [[? input-number 1]] in^2 100

Hint 1 This shape is made up of a square at the center and two right triangles on the sides.

3.5   3.5   3.5

3.5
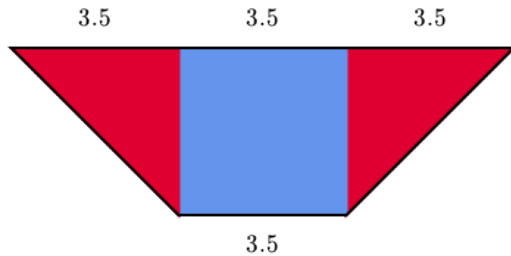
We know the base of the shape is 3.5 inches wide, so we can form a square at the center of the shape with side length 3.5 inches.

Area $= 3.5 \cdot 3.5 = 12.25$ in^2

We can combine the two right triangles to form another square:

3.5

3.5

Area $= 3.5 \cdot 3.5 = 12.25$ in^2

Hint 2 To find the total area of the shape, we can combine the two areas we found:

$12.25 + 12.25 = 24.5$

The area of one figure is 24.5 square inches. We need 8 of these figures for the poster.

$24.5 \cdot 8 = 100$ in^2
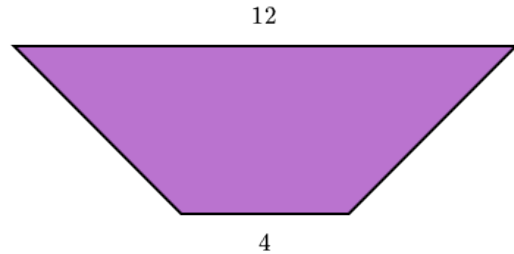
Hint 3 The figures will measure 100 in^2 in total.
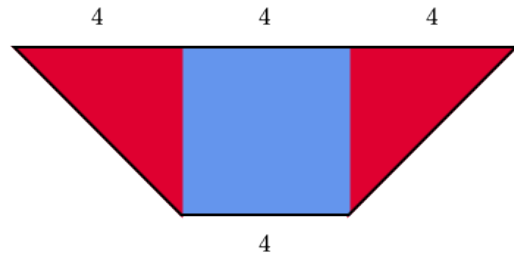
5 x3bba6b5c4863bda7

Phyllis is making a metal sign for her yard. She needs to create 10 figures exactly the same size and shape as the figure below, which is measured in inches.

**How many square inches of metal will her figures measure in total?**

12

4

Ans [[? input-number 1]] in^2 320

Hint 1 This shape is made up of a square at the center and two right triangles on the sides.

4   4   4

4

We know the base of the shape is 4 inches wide, so we can form a square at the center of the shape with side length 4 inches.

Area $= 4 \cdot 4 = 16$ in^2

We can combine the two right triangles to form another square:

4

4
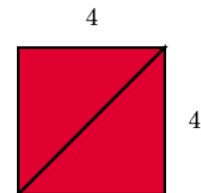
Area $= 4 \cdot 4 = 16$ in^2

Hint 2 To find the total area of the shape, we can combine the two areas we found:

3

$$16 + 16 = 32$$

The area of one figure is 32 square inches. We need 10 of these figures for the sign.

$$32 \cdot 10 = 320 \text{ in}^2$$
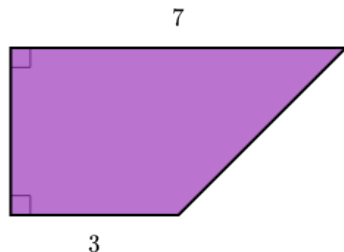
Hint 3   The figures will measure 320 in^2 in total.

6   x405cd06e1a64fe0a

Amy's family loves the Broncos, so she is going to make them flags to hang on their porches. She is going to create 20 flags exactly the same size and shape as the figure below, which is measured in feet.

How many square feet of fabric will Amy's figures measure in total?
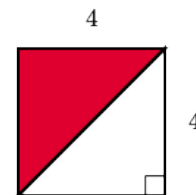

Ans   [[? input-number 1]] ft^2 340

Hint 1   This shape is made up of a square with a right triangle on the side.
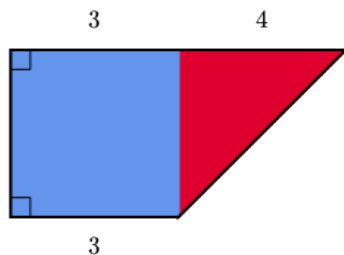
We know the base of the shape is 3 feet wide, so we can form a square with side length 3 feet.

$$\text{Area} = 3 \cdot 3 = 9 \text{ ft}^2$$

The right triangle on the side is one half of another square:

$$\text{Area} = \frac{1}{2} \cdot 4 \cdot 4 = \frac{1}{2} \cdot 16 \text{ ft}^2 = 8 \text{ ft}^2$$

Hint 2   To find the total area of the shape, we can combine the two areas we found:

$$9 + 8 = 17$$

The area of one figure is 17 square feet. Amy is making 20 of these figures for the flags.

$$17 \cdot 20 = 340 \text{ ft}^2$$
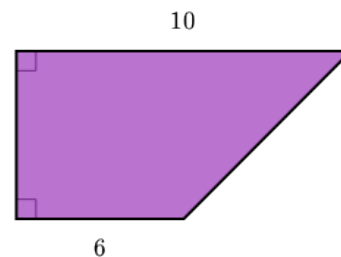
Hint 3   The figures will measure 340 ft^2 in total.

7   x4aa3a7d56645732b

Terry's family is going on a trip to a Saints football game, and they are making matching car flags for their vehicles. He is going to create 8 flags exactly the same size and shape as the figure below, which is measured in inches.

How many square inches of fabric will Terry's figures measure in total?
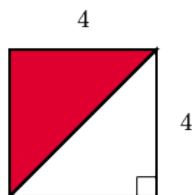

Ans   [[? input-number 1]] in^2 352

Hint 1   This shape is made up of a square with a right triangle on the side.
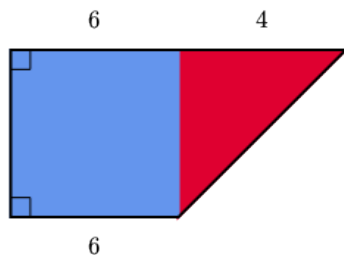
We know the base of the shape is 6 inches wide, so we can form a square with side length 6 inches.

Area $= 6 \cdot 6 = 36$ in^2

The right triangle on the side is one half of another square:

Area $= \dfrac{1}{2} \cdot 4 \cdot 4 = \dfrac{1}{2} \cdot 16$ in$^2 = 8$ in^2

Hint 2 To find the total area of the shape, we can combine the two areas we found:

$36 + 8 = 44$

The area of one figure is 44 square inches. Terry is making 8 of these figures for the flags.

$44 \cdot 8 = 352$ in^2

Hint 3 The figures will measure 352 in^2 in total.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
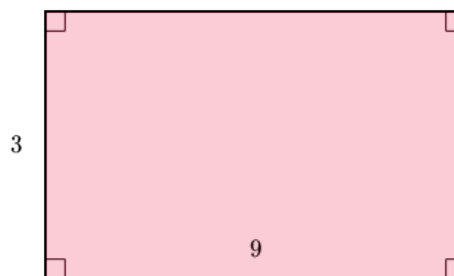**Version:** 95de722e.. 2013-10-09

8   x4c1b6ee09e08a9a0

Mrs. LeJeune is decorating her bulletin board. She is covering the board with paper and then placing a border along each edge of the board. **Using the picture below, what is the area of the border if the dimensions are in feet?**
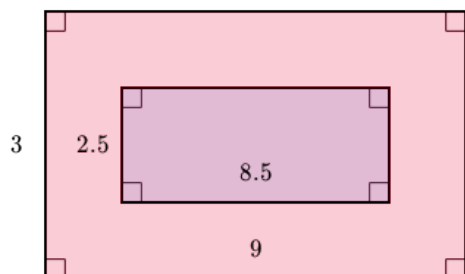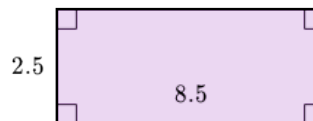

Ans   [[? input-number 1]] ft^2 5.75

Hint 1 First, we need to find the area of the entire rectangle.

$Area = 9 \times 3 = 27$ ft^2

Hint 2 Then we find the area of the rectangle on the inside.

$Area = 8.5 \times 2.5 = 21.25$ ft^2

Hint 3 We can find the area of the border by finding the area of the larger rectangle and subtracting the area of the smaller rectangle.

$27 - 21.25 = 5.75$ ft^2

Hint 4 The area of the border is 5.75 ft^2

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
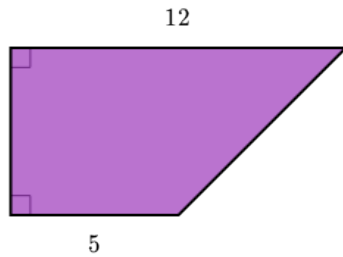**Version:** a7ad974b.. 2013-10-07

9   x4c306a907c3d7c75

Boudreaux High School is selling porch flags to support their basketball team. The school is going to create 150 flags exactly the same size and shape as the figure below, which is measured in feet.
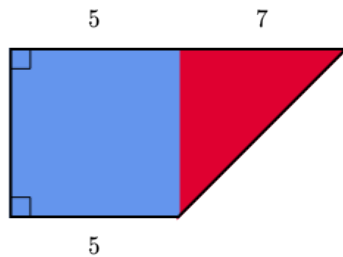
How many square feet of fabric will Boudreaux High School's figures measure in total?

12

5

Annie is painting a wall. The picture below, which is measured in feet, represents the area that she has painted so far.

How many square feet of wall has Annie painted?

4

4

8

2

Ans   [[? input-number 1]] ft^2 7425
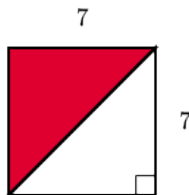
Hint 1   This shape is made up of a square with a right triangle on the side.

5   7

5

We know the base of the shape is 5 feet wide, so we can form a square with side length 5 feet.

Area $= 5 \cdot 5 = 25$ ft^2

The right triangle on the side is one half of another square:

7

7

Area $= \dfrac{1}{2} \cdot 7 \cdot 7 = \dfrac{1}{2} \cdot 49$ ft$^2 = 24.5$ ft^2

Hint 2   To find the total area of the shape, we can combine the two areas we found:

$25 + 24.5 = 49.5$

The area of one figure is 49.5 square feet. Boudreaux High School is making 150 of these figures for the flags.

$49.5 \cdot 150 = 7425$ ft^2
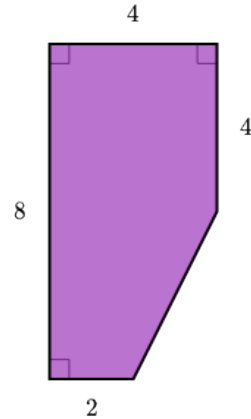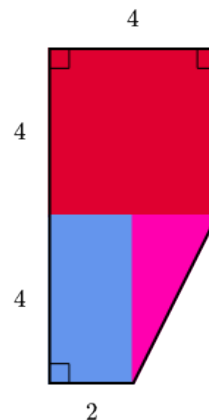
Hint 3   The figures will measure 7425 ft^2 in total.

Tags: CC.6.G.A.1, i.   Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR

Version: d50ac771.. 2013-10-09

Ans   [[? input-number 1]] feet^2 28

Hint 1   This shape is made up of a square at the top, a rectangle on the left side, and a triangle on the right side.

4

4

4

2

We know the square at the top of the shape has a side length of 4 feet.

Area $= 4 \cdot 4 = 16$ feet^2

We know the rectangle on the left side has a length of 4 feet and a width of 2 feet.

Area $= 4 \cdot 2 = 8$ feet^2

The triangle on the right side is one-half of another rectangle:

$$\text{Area} = \frac{1}{2} \cdot 4 \cdot 2 = \frac{1}{2} \cdot 8 \text{ feet}^2 = 4 \text{ feet}^2$$

Hint 2 To find the total area of the shape, we can combine the three areas we found:

$16 + 8 + 4 = 28$

The area of this figure is 28 square feet.

Hint 3 Annie has painted 28 feet^2 in total.
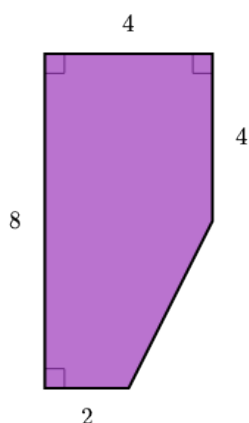
Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
Version: 476595a3.. 2013-10-11

11 x5dc8c670f44d1837

Blaine is painting a design on a wall. The picture below, which is measured in inches, represents one of the shapes that he is painting on the wall.

If Blaine painted 22 of these figures on the wall, how many square feet of wall has Blaine painted?

Ans [[? input-number 1]] feet^2 616

Hint 1 This shape is made up of a square at the top, a rectangle on the left side, and a triangle on the right side.
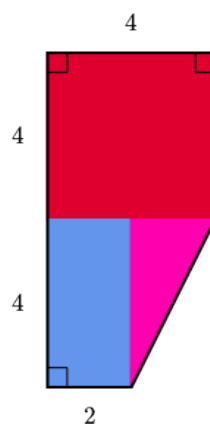
We know the square at the top of the shape has a side length of 4 inches.

$\text{Area} = 4 \cdot 4 = 16$ inches^2

We know the rectangle on the left side has a length of 4 inches and a width of 2 inches.

$\text{Area} = 4 \cdot 2 = 8$ inches^2

The triangle on the right side is one-half of another rectangle:

$$\text{Area} = \frac{1}{2} \cdot 4 \cdot 2 = \frac{1}{2} \cdot 8 \text{ inches}^2 = 4 \text{ inches}^2$$

Hint 2 To find the total area of the shape, we can combine the three areas we found:

$16 + 8 + 4 = 28$

The area of this figure is 28 square feet.

Hint 3 The area of one figure is 28 square inches. We need 22 of these figures.

$28 \cdot 22 = 616$ in^2

Hint 4 Blaine has painted 616 inches^2 in total.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
Version: 3e78374a.. 2013-10-11

12 x6457d5067a42fab1

Tracey is working on her graduation scrapbook. She cut the corners off of a square picture in order to create an octagon- an eight sided figure. In the drawing below, the sides are in inches. **What is the area of the trimmed picture?**
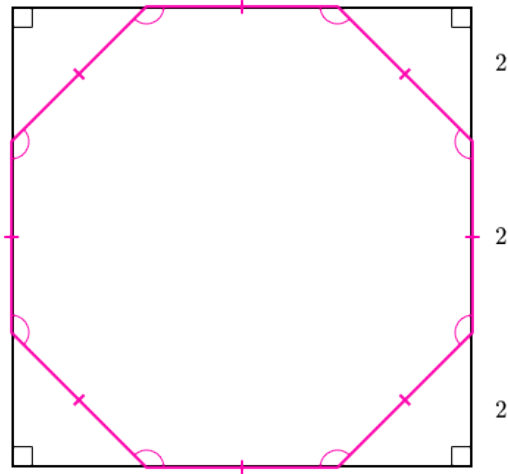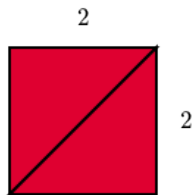
Ans [[? input-number 1]] in^2 56

Hint 1 We know the original square picture is 8 inches long and 8 inches wide. Area $= 8 \cdot 8 = 64$ in^2

Hint 2 We have 4 right triangles that are the same size and shape.

We can combine two right triangles to form another square:

Area $= 2 \cdot 2 = 4$ in^2

Since we have 2 more triangles, we can make another square, so we need to multiply the area of this square by 2.

$2 \cdot 4 = 8$ in^2

The area of the four triangles combined is 8 in^2.

Hint 3 If we subtract the combined area of the triangles from the area of the square, we will find the area of the trimmed picture.

64 in$^2 - 8$ in$^2 = 56$ in^2

Hint 4 The area of the trimmed picture is 56 in^2.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
**Version:** d7db7c47.. 2013-10-07

13   x6e3f6cd12498db47

Buffy and her sister Dawn have a 10 feet by 40 feet rectangular lap pool in their backyard. They are not getting along today, so they are going to divide the pool in half diagonally with a rope. **What is the area of the swimming pool that each of them will have if the sides are measured in feet?**
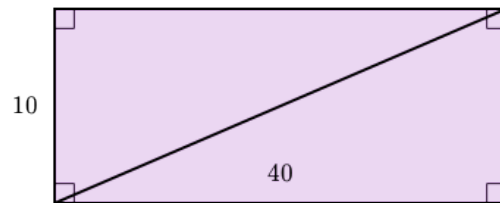
Ans [[? input-number 1]] ft^2 200

Hint 1 First let's draw a model of our swimming pool.
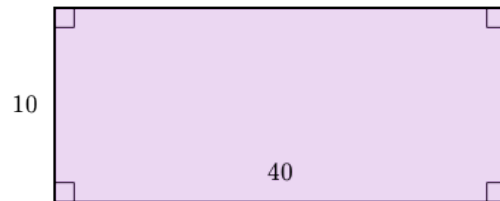
We know the rectangle is 40 feet long and 10 feet wide. Area $= 40 \cdot 10 = 400$ ft^2

Hint 2 They are going to divide the pool in half.

We need to figure out half of the area of the entire rectangle.

Area $= \dfrac{1}{2} \cdot 400 = 200$ ft^2

Hint 3 The area of half of the pool is 200 ft^2.

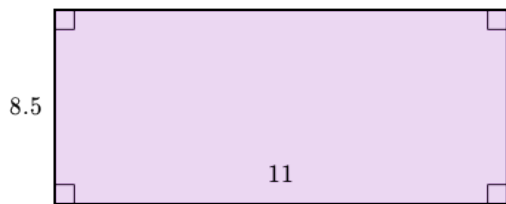**Tags:** CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
Version: d94b226e.. 2013-10-07

14   x793958e5c731dffd

Olivia is cutting an 8.5 inch by 11 inch piece of paper diagonally. **What is the area of each piece after she makes her cut?**

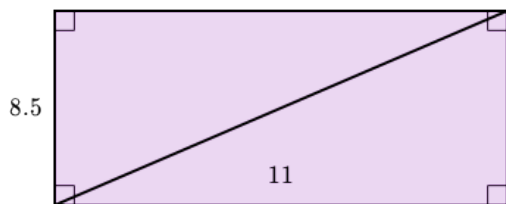**Ans** [[? input-number 1]] in^2 46.75

Hint 1 First let's draw a model of our swimming pool.

We know the rectangle is 11 inch long and 8.5 inch wide.
Area $= 11 \cdot 8.5 = 93.5$ in^2

Hint 2   She is going to cut the paper in half.

We need to figure out half of the area of the entire rectangle.
Area $= \dfrac{1}{2} \cdot 93.5 = 46.75$ in^2

**Hint 3**   The area of half of the paper is 46.75 in^2.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
**Version:** 2c1d451e.. 2013-10-07

15   x80c83b209703765e

You were just elected president of the Student Council at your school. Now you are responsible for decorating the bulletin board in the hall outside of the office. You need to create 5 figures exactly the same size and shape as the figure below, which is measured in inches.

How many square inches of paper will your figures measure in total?
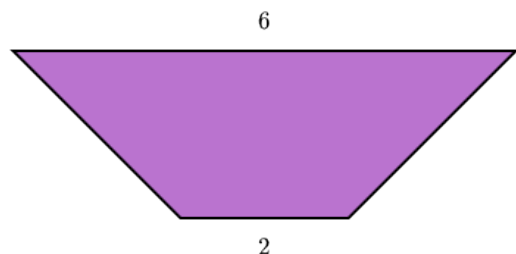
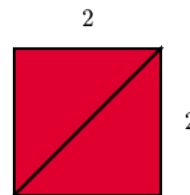**Ans**   [[? input-number 1]] in^2 40

Hint 1   This shape is made up of a square at the center and two right triangles on the sides.
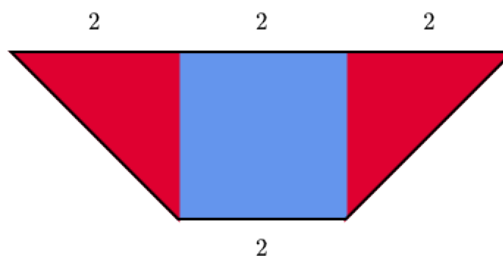
We know the base of the shape is 2 inches wide, so we can form a square at the center of the shape with side length 2 inches.

Area $= 2 \cdot 2 = 4$ in^2

We can combine the two right triangles to form another square:

Area $= 2 \cdot 2 = 4$ in^2

Hint 2   To find the total area of the shape, we can combine the two areas we found:

$4 + 4 = 8$

The area of one figure is 8 square inches. We need 5 of these figures for the bulletin board.
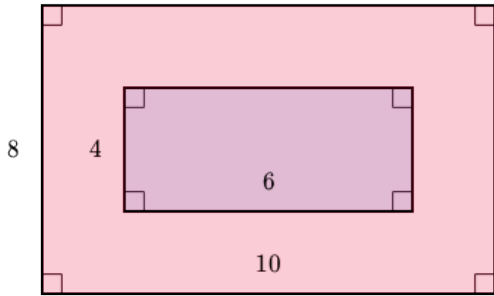
$8 \cdot 5 = 40$ in^2

Hint 3   The figures will measure 40 in^2 in total.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
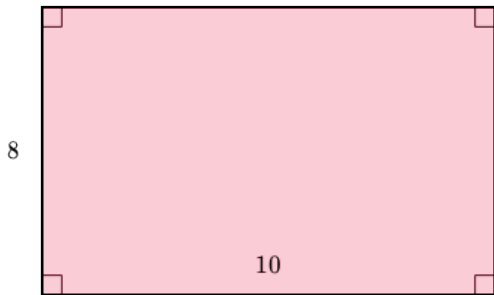**Version:** 665e26eb.. 2013-10-06

16   x8247cfe2962a2672

Barney is putting a picture in a frame. **Using the picture below, what is the area of the frame if the dimensions are in inches?**
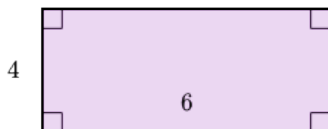
Ans [[? input-number 1]] in^2 56

Hint 1 First, we need to find the area of the entire rectangle.

$Area = 10 \times 8 = 80$ in^2

Hint 2 Then we find the area of the rectangle on the inside.

$Area = 6 \times 4 = 24$ in^2

Hint 3 We can find the area of the frame by finding the area of the larger rectangle and subtracting the area of the smaller rectangle.

$80 - 24 = 56$ in^2

Hint 4 The area of the frame is 56 in^2

17 x83417cfed56951cb

Amy is captain of the cheerleading squad at her school, and her school's football team is going to the state championships! To support the team, the cheerleading squad is selling car flags. She is going to create 50 flags exactly the same size and shape as the figure below, which is measured in inches.

How many square inches of fabric will Amy's figures measure in total?
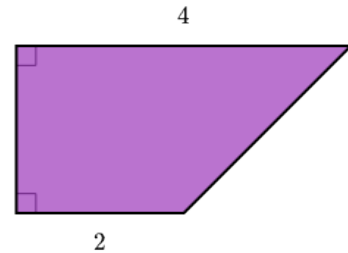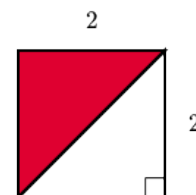

Ans [[? input-number 1]] in^2 300

Hint 1 This shape is made up of a square with a right triangle on the side.
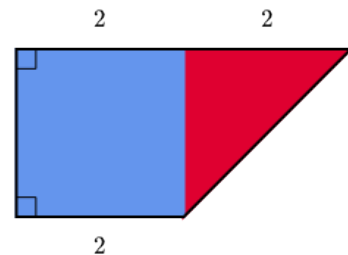
We know the base of the shape is 2 inches wide, so we can form a square with side length 2 inches.

Area $= 2 \cdot 2 = 4$ in^2

The right triangle on the side is one half of another square:

Area $= \dfrac{1}{2} \cdot 2 \cdot 2 = \dfrac{1}{2} \cdot 4$ in^2 $= 2$ in^2

Hint 2 To find the total area of the shape, we can combine the two areas we found:

$4 + 2 = 6$

The area of one figure is 6 square inches. Amy is making 50 of these figures for the flags.

$6 \cdot 50 = 300 \text{ in}^2$

Hint 3 The figures will measure 300 in^2 in total.
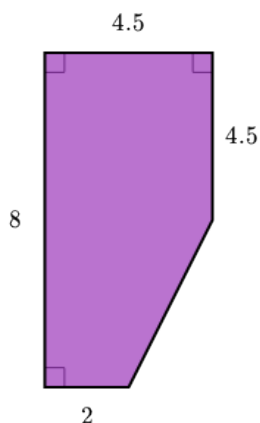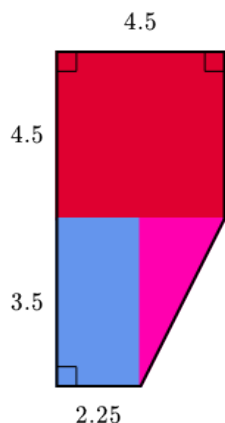
18 x8c6bc6e1d75edb7d

Lonnie is painting his bathroom. The picture below, which is measured in feet, represents the area that he has painted so far.

How many square feet of wall has Lonnie painted?

Ans   [[? input-number 1]] feet^2 32.0625

Hint 1 This shape is made up of a square at the top, a rectangle on the left side, and a triangle on the right side.

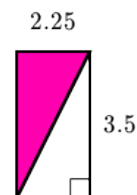

We know the square at the top of the shape has a side length of 4.5 feet.

Area $= 4.5 \cdot 4.5 = 20.25 \text{ feet}^2$

We know the rectangle on the left side has a length of 3.5 feet and a width of 2.25 feet.

Area $= 3.5 \cdot 2.25 = 7.875 \text{ feet}^2$

The triangle on the right side is one-half of another rectangle:

$$\text{Area} = \frac{1}{2} \cdot 3.5 \cdot 2.25 = \frac{1}{2} \cdot 7.875 \text{ feet}^2 = 3.9375 \text{ feet}^2$$

Hint 2 To find the total area of the shape, we can combine the three areas we found:

$20.25 + 7.875 + 3.9375 = 28$

The area of this figure is 32.0625 square feet.
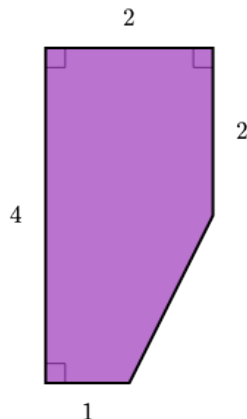
Hint 3 Annie has painted 32.0625 feet^2 in total.
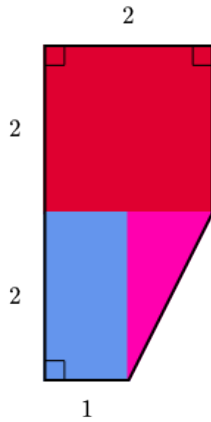
19 x9c5a0a3921162972

Bethany is cutting the grass. The picture below, which is measured in acres, represents the area that she has cut.

How many square acres of grass has Bethany cut?

Ans   [[? input-number 1]] acres^2 7

Hint 1 This shape is made up of a square at the top, a rectangle on the left side, and a triangle on the right side.

We know the square at the top of the shape has a side length of 2 acres.

$\text{Area} = 2 \cdot 2 = 4 \text{ acres}^2$

We know the rectangle on the left side has a length of 2 acres and a width of 1 acre.

$\text{Area} = 2 \cdot 1 = 2 \text{ acres}^2$

The triangle on the right side is one-half of another rectangle:

$\text{Area} = \dfrac{1}{2} \cdot 2 \cdot 1 = \dfrac{1}{2} \cdot 2 \text{ acres}^2 = 1 \text{ acres}^2$

Hint 2 To find the total area of the shape, we can combine the three areas we found:

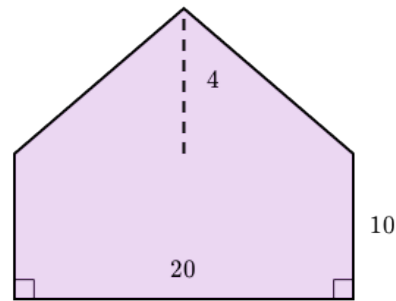$4 + 2 + 1 = 7$

The area of this figure is 7 square acres.

Hint 3 Bethany has cut 7 acres^2 in total.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
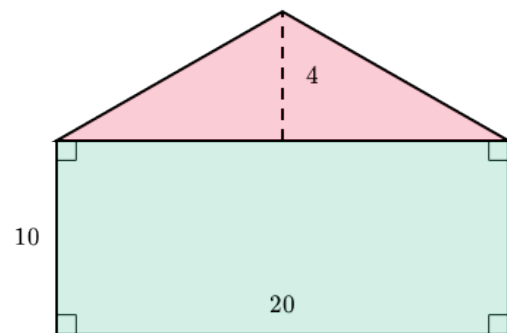**Version:** c0d90817.. 2013-10-11

20 xa24b830a97fc8ae7

Jill has 10 windows that she is going to cover with curtains. **Using the model below, what is the area of the windows if the sides are measured in inches?**
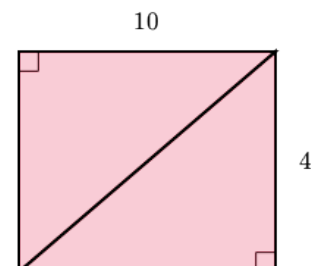
Ans [[? input-number 1]] in^2 2400

Hint 1 This shape is made up of a rectangle with a triangle on the top.

We know the rectangle is 20 inches long and 10 inches wide.

$\text{Area} = 20 \cdot 10 = 200 \text{ in}^2$

The triangle on the top can be divided into two right triangles and then combined to form a rectangle.

$\text{Area} = 10 \cdot 4 = 40 \text{ in}^2$

Hint 2 To find the total area of the shape, we can combine the two areas we found:

$\text{Area} = 200 + 40 = 240 \text{ in}^2$

Hint 3 The area of one figure is 240 square inches. We need 10 of these figures.
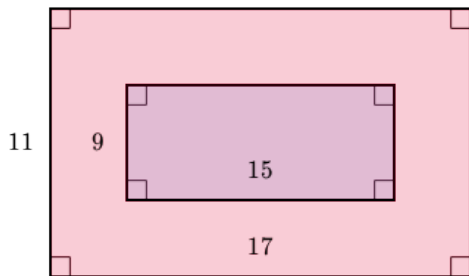
$$240 \cdot 10 = 2400 \text{ in}^2$$

**Hint 4** The area of the figure is 2400 in^2

21 xb46775681091dd1e

Bobby is decorating a rectangular cake. He is going to put a rectangle of frosting around the border of the cake to form a smaller rectangle centered on the top of the cake. **Using the picture below, what is the area of the icing border if the dimensions are in inches?**
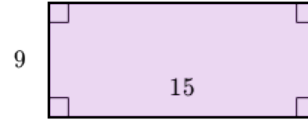
Ans [[? input-number 1]] in^2 52

Hint 1 First, we need to find the area of the entire rectangle.
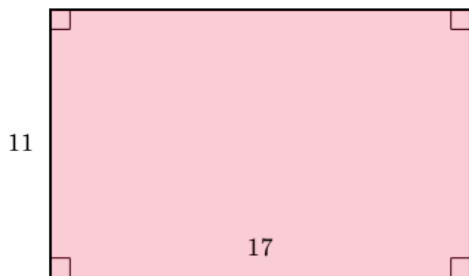
$$Area = 11 \times 17 = 187 \text{ in}^2$$

Hint 2 Then we find the area of the rectangle on the inside.

$$Area = 15 \times 9 = 135 \text{ in}^2$$

Hint 3 We can find the area of the icing border by finding the area of the larger rectangle and subtracting the area of the smaller rectangle.

$$187 - 135 = 52 \text{ in}^2$$

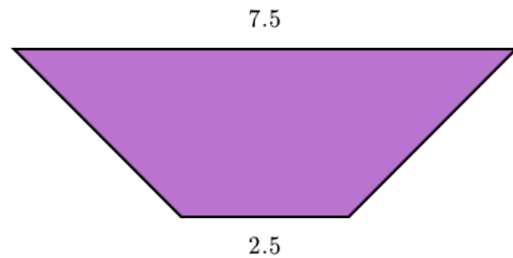**Hint 4** The area of the icing border is 52 in^2
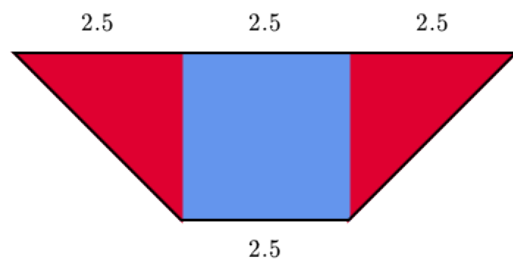
22 xcc05cd118a5fddc1

Jimmy is making a poster for his art class. He needs to create 5 figures exactly the same size and shape as the figure below, which is measured in inches.

How many square inches of paper will his figures measure in total?

Ans [[? input-number 1]] in^2 62.5

Hint 1 This shape is made up of a square at the center and two right triangles on the sides.
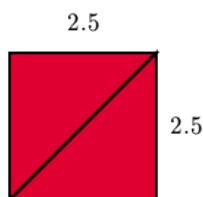
We know the base of the shape is 2.5 inches wide, so we can

13

form a square at the center of the shape with side length 2.5 inches.

Area $= 2.5 \cdot 2.5 = 6.25$ in^2

We can combine the two right triangles to form another square:

Area $= 2.5 \cdot 2.5 = 6.25$ in^2

Hint 2 To find the total area of the shape, we can combine the two areas we found:

$6.25 + 6.25 = 12.5$

The area of one figure is 12.5 square inches. We need 5 of these figures for the poster.

$12.5 \cdot 5 = 62.5$ in^2

Hint 3 The figures will measure 62.5 in^2 in total.

**Tags:** CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
Version: 5cca526c.. 2013-10-10

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23   xd371469d54e255a9

A rectangular football field measures 120 yds by 53.3 yds. It is supposed to rain tonight, so the grounds crew is going to cover the field with tarps. They place a tarp diagonally across the field and unfold it to cover half the field. The rain stops them before they can cover the rest of the field. **What is the area of the field that is covered?**
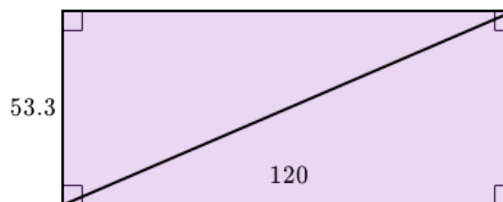
Ans   [[? input-number 1]] ft^2 200

Hint 1 First let's draw a model of our football field.
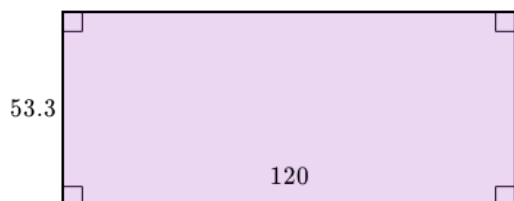
We know the rectangle is 120 yards long and 53.3 yards wide.

Area $= 53.3 \cdot 120 = 6396$ ft^2

Hint 2 They are going to divide the field in half.

We need to figure out half of the area of the entire rectangle.

Area $= \dfrac{1}{2} \cdot 6396 = 3198$ yd^2

**Hint 3** The area of half of the field is 3198 yd^2.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
Version: 7163257f.. 2013-10-07

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24   xd9d282fd6e656546

Tracey is working on her graduation scrapbook. She cut the corners off of a square picture in order to create an octagon- an eight sided figure. In the drawing below, the sides are in inches. **What is the combined area of the discarded pieces?**
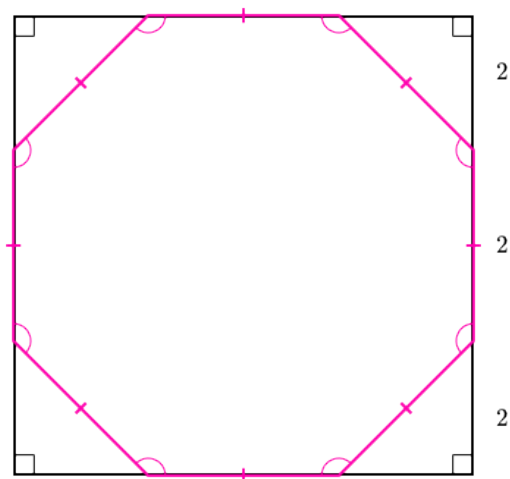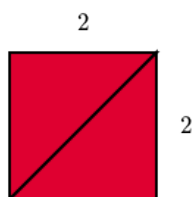

Ans   [[? input-number 1]] in^2 8

Hint 1 We know the original square picture is 8 inches long and 8 inches wide. Area $= 8 \cdot 8 = 64$ in^2

Hint 2 We have 4 right triangles that are the same size and shape.

We can combine two right triangles to form another square:

2

Area $= 2 \cdot 2 = 4$ in^2

Hint 3 Since we have 2 more triangles, we can make another square, so we need to multiply the area of this square by 2.
$2 \cdot 4 = 8$ in^2

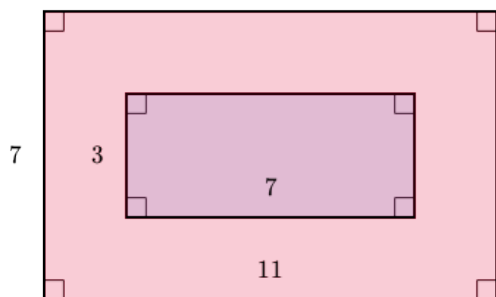**Hint 4** The area of the discarded pieces is 8 in^2.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
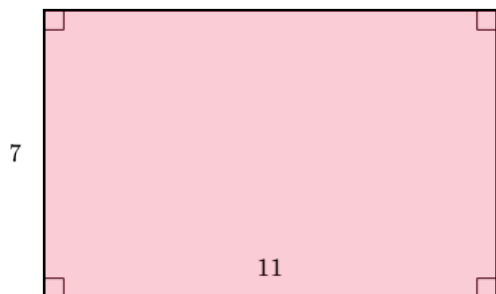**Version:** f6d3d15a.. 2013-10-07

25 xe0cf9db511efd2db

Bob is putting a walkway around his flower bed. **Using the picture below, what is the area of his walkway if the dimensions are in feet?**
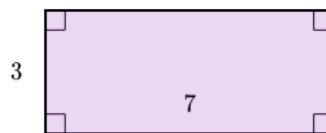

Ans [[? input-number 1]] ft^2 56

Hint 1 First, we need to find the area of the entire rectangle.

$Area = 11 \times 7 = 77$ ft^2

Hint 2 Then we find the area of the rectangle on the inside.

$Area = 7 \times 3 = 21$ ft^2

Hint 3 We can find the area of the walkway by finding the area of the larger rectangle and subtracting the area of the smaller rectangle.
$77 - 21 = 56$ ft^2

**Hint 4** The area of the walkway is 56 ft^2

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
**Version:** 0fb3a360.. 2013-10-06

26 xe4c6cedbf0f152d1

Tom and Jerry have a wrestling ring in their backyard. Their ring is an octagon- an eight sided figure- enclosed in a square fence. In the drawing below, the sides are in feet. **What is the combined area of all of the spaces between the fence and the octagon?**
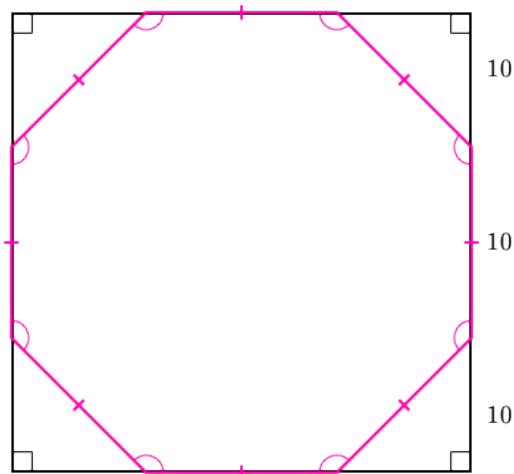
Ans [[? input-number 1]] ft^2 700

Hint 1 We have 4 right triangles that are the same size and shape.

We can combine two right triangles to form a square:
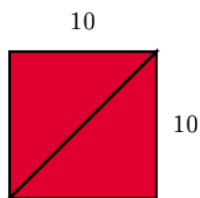
$$\text{Area} = 10 \cdot 10 = 100 \text{ ft}^2$$

Hint 2 Since we have 2 more triangles, we can make another square, so we need to multiply the area of this square by 2.

$$2 \cdot 100 = 200 \text{ ft}^2$$

**Hint 3** The area of the four triangles combined is 200 ft^2.

27 xf3e32e2d6e888e1b

Mrs. Thibodeaux is making paper signs for each of her students. She is going to create 25 signs exactly the same size and shape as the figure below, which is measured in inches.

How many square inches of paper will Mrs. Thibodeux's figures measure in total? Round all answers to the nearest hundredth.
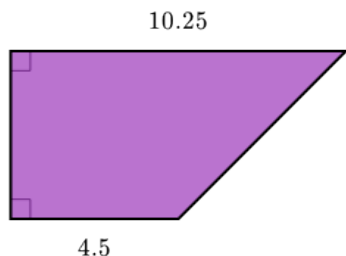
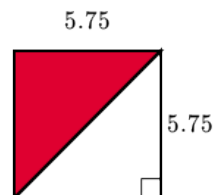**Ans** [[? input-number 1]] in^2 919.5

Hint 1 This shape is made up of a square with a right triangle on the side.
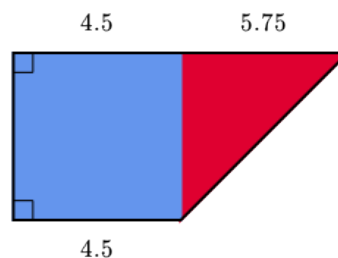
We know the base of the shape is 4.5 inches wide, so we can form a square with side length 4.5 inches.

$$\text{Area} = 4.5 \cdot 4.5 = 20.25 \text{ in}^2$$

The right triangle on the side is one half of another square:

$$\text{Area} = \frac{1}{2} \cdot 5.75 \cdot 5.75 = \frac{1}{2} \cdot 33.06 \text{ in}^2 = 16.53 \text{ in}^2$$

Hint 2 To find the total area of the shape, we can combine the two areas we found:

$$20.25 + 16.53 = 36.78$$

The area of one figure is 36.78 square inches. Mrs. Thibodeaux is making 25 of these figures for the signs.

$$36.78 \cdot 25 = 919.5 \text{ in}^2$$
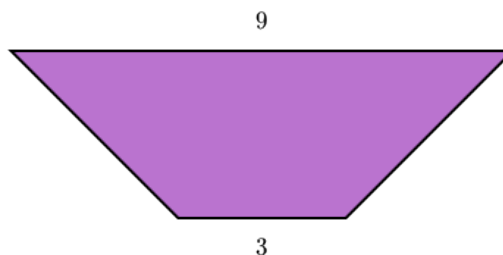
**Hint 3** The figures will measure 919.5 in^2 in total.

28 xf69bdd9ef555260e

Lucy is making a quilt. She needs to create 10 figures exactly the same size and shape as the figure below, which is measured in inches.

How many square inches of fabric will her figures measure in total?
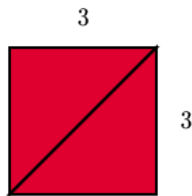
Ans   [[? input-number 1]] in^2 180

Hint 1   This shape is made up of a square at the center and two right triangles on the sides.
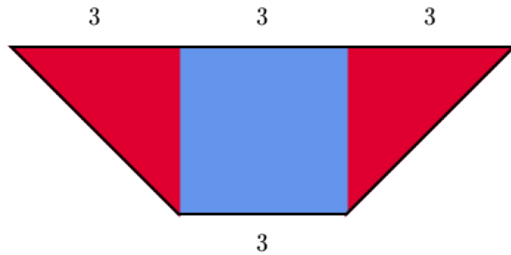
We know the base of the shape is 3 inches wide, so we can form a square at the center of the shape with side length 3 inches.

Area $= 3 \cdot 3 = 9$ in^2

We can combine the two right triangles to form another square:

Area $= 3 \cdot 3 = 9$ in^2

Hint 2   To find the total area of the shape, we can combine the two areas we found:

$9 + 9 = 18$

The area of one figure is 18 square inches. We need 10 of these figures for the quilt.

$18 \cdot 10 = 180$ in^2

**Hint 3**   The figures will measure 180 in^2 in total.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
**Version:** e057d75e.. 2013-10-10

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29   xf71a5277ebd2b1ee

Jeremy's store is going to sell flags. He is going to create 20 flags exactly the same size and shape as the figure below, which is measured in feet.

How many square feet of fabric will Boudreaux High School's figures measure in total?
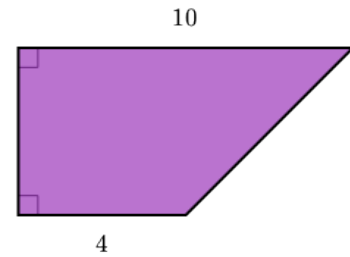
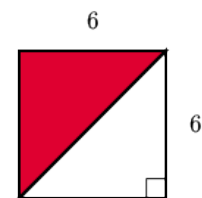
Ans   [[? input-number 1]] ft^2 680

Hint 1   This shape is made up of a square with a right triangle on the side.
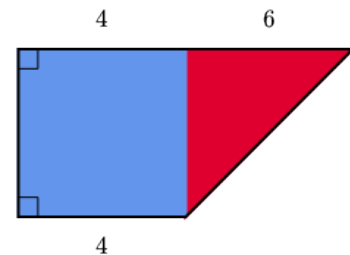
We know the base of the shape is 4 feet wide, so we can form a square with side length 4 feet.

Area $= 4 \cdot 4 = 16$ ft^2

The right triangle on the side is one half of another square:

Area $= \frac{1}{2} \cdot 6 \cdot 6 = \frac{1}{2} \cdot 36$ ft$^2 = 18$ ft^2

Hint 2   To find the total area of the shape, we can combine the two areas we found:

$16 + 18 = 34$

The area of one figure is 34 square feet. Boudreaux High School is making 20 of these figures for the flags.

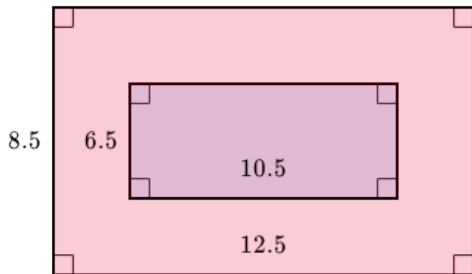$49.5 \cdot 20 = 680$ ft^2

Hint 3   The figures will measure 680 ft^2 in total.

Tags: CC.6.G.A.1, i. Composing and Decomposing Shapes 1.1, SB.6.1.H.1.CR
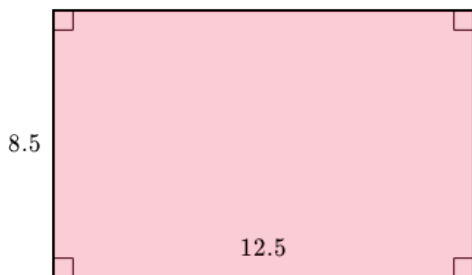**Version:** 0b9e5b7f.. 2013-10-09

30 xffb7d616f1607a79

Talisa is digging a trench around her garden. **Using the picture below, what is the area of the trench if the dimensions are in feet?**
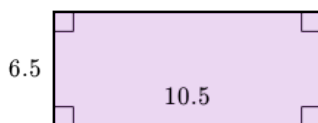

Ans   [[? input-number 1]] ft^2 38

Hint 1   First, we need to find the area of the entire rectangle.

$Area = 12.5 \times 8.5 = 106.25$ ft^2

Hint 2   Then we find the area of the rectangle on the inside.

$Area = 10.5 \times 6.5 = 68.25$ ft^2

Hint 3   We can find the area of the trench by finding the area of the larger rectangle and subtracting the area of the smaller rectangle.

$106.25 - 68.25 = 38$ ft^2