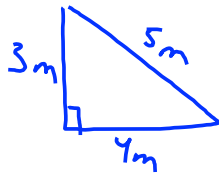
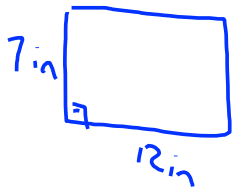


Day 4 - Area

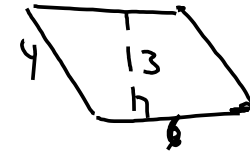
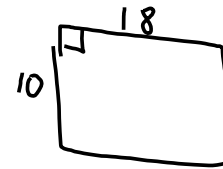
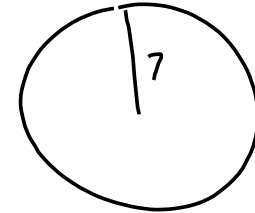
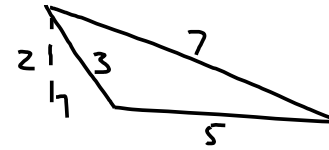
- Measures how many squares fit inside a figure
- Units are squared
- Use your reference sheet

Example: Area of the following:

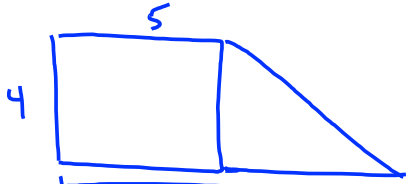


Your Turn

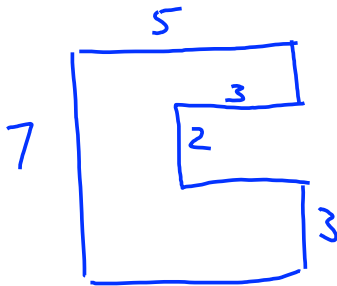
Find the areas: all in meters



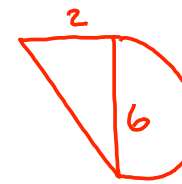
Shaded area as a sum



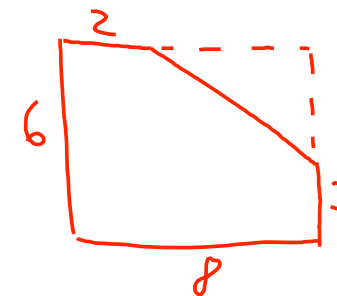
Shaded area as a subtraction:



Shaded area as a sum



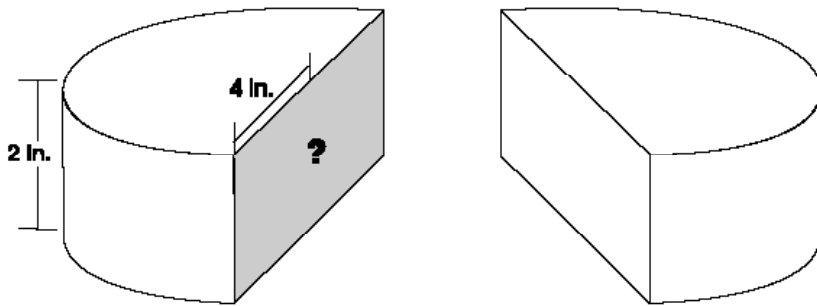
Shaded area as a subtraction:



OGT Preparation #4
ME06 - Area

Name _____

1. Gene has a cylinder with radius 4 inches and height 2 inches. He cut the cylinder in half along the length of the diameter, as shown in the diagram below.



What is the area of the shaded cross-section?

- A. 48π square inches B. 24π square inches
C. 16 square inches D. 8 square inches

2. The area of a right triangle is 24 square feet. second right triangle has a base that is 2 times as long as the first triangle's base and a height that is 3 times as long as the first triangle's height. What is the area of the second triangle?

- A. 48 square feet B. 72 square feet C. 144 square feet D. 864 square feet

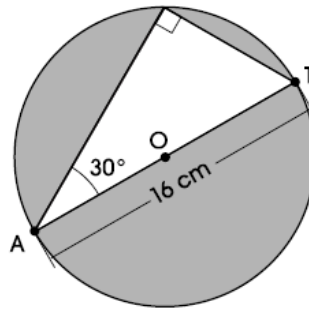
3. Dominic cuts out the largest possible circle from his 2-foot by 2-foot piece of art paper. Which is a reasonable estimate of the fraction of the art paper that is left over?

- A. less than $\frac{1}{4}$ B. between $\frac{1}{4}$ and $\frac{1}{2}$
C. between $\frac{1}{2}$ and $\frac{3}{4}$ D. more than $\frac{3}{4}$

4. Jennifer wants to close off a rectangular area in her lawn so that she can leave her dog outside. She buys enough fencing to close off 252 square feet of lawn. If the length of the enclosure is 21 feet, what is the width?

- A. 12 feet B. 14 feet C. 231 feet D. 273 feet

5. In the diagram below, line segment AT is a diameter of the circle with center O.

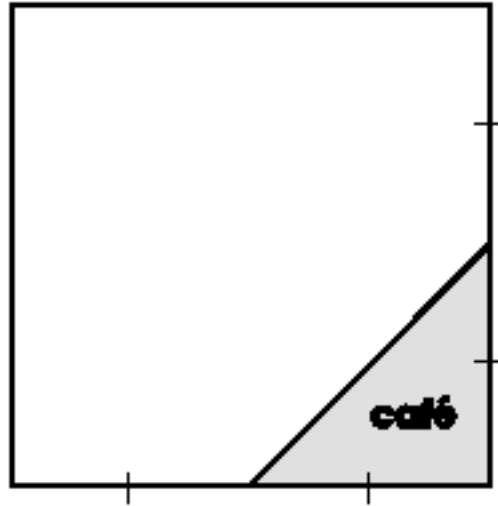


What is the area of the shaded part of the circle?

- A. 18.3 cm^2
- B. 42.3 cm^2
- C. 145.6 cm^2
- D. 194.1 cm^2

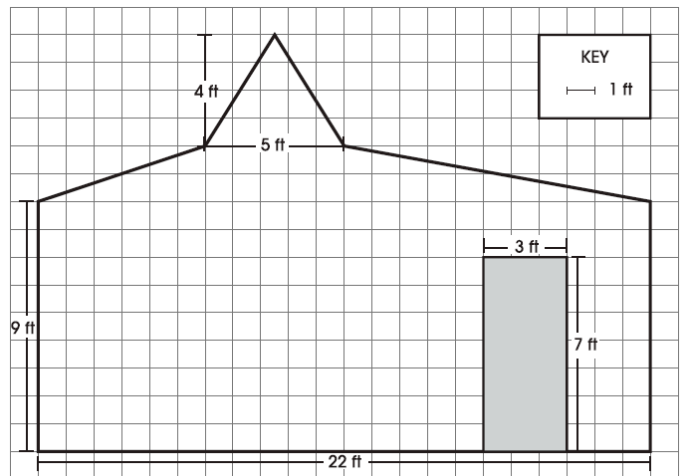
6. [SA] The floor plan of one room in a bookstore is a square with an area of 576 square feet. Part of this room is taken up by a café. The border of the café runs from the midpoints of two adjacent walls.

In your **Answer Document**, find the area, in square feet, of the café. Show your work or explain how you found your answer.



7. The diagram below shows the dimensions of a wall that needs to be painted. The door represented by the shaded rectangle is **not** to be painted.

In your **Answer Document**, determine the area, to the nearest square foot, of the wall that is to be painted. Show your work or provide an explanation for your answer.

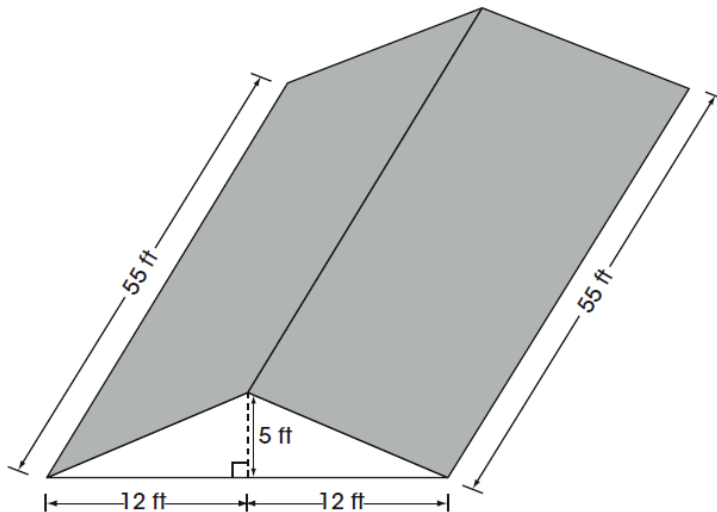


8. The city flag for Celina, Ohio, is shown below.



The flag has a total area of 5,472 square centimeters. In the center of the flag is a circular design. The diameter of this design is 48 centimeters. What is the approximate area of the flag that is **NOT** covered by the circular design?

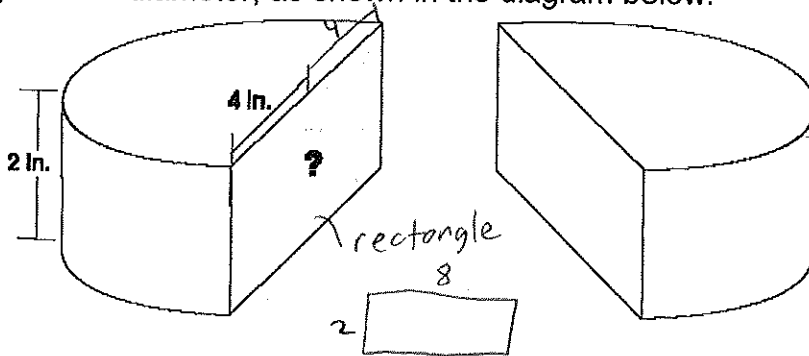
- A. 1,763 cm²
B. 1,809 cm²
C. 3,663 cm²
D. 5,321 cm²
9. Tammy is roofing a house. She must buy enough shingles to cover the shaded rectangular areas on both sides of the roof, as shown in the diagram below.



What is the area she must cover?

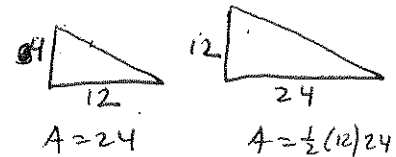
- A. 715 ft²
B. 835 ft²
C. 1,430 ft²
D. 6,600 ft²

1. Gene has a cylinder with radius 4 inches and height 2 inches. He cut the cylinder in half along the length of the diameter, as shown in the diagram below.



What is the area of the shaded cross-section?

- A. 48π square inches
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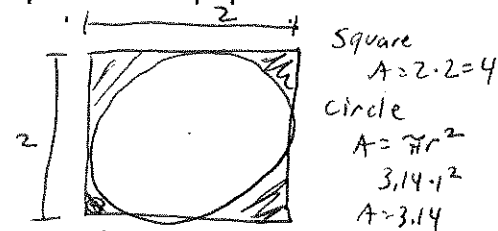


2. The area of a right triangle is 24 square feet. second right triangle has a base that is 2 times as long as the first triangle's base and a height that is 3 times as long as the first triangle's height. What is the area of the second triangle?

- A. 48 square feet
 B. 72 square feet
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3. Dominic cuts out the largest possible circle from his 2-foot by 2-foot piece of art paper. Which is a reasonable estimate of the fraction of the art paper that is left over?

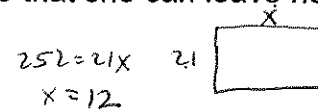
- A. less than $\frac{1}{4}$
 B. between $\frac{1}{4}$ and $\frac{1}{2}$
 C. between $\frac{1}{2}$ and $\frac{3}{4}$
 D. more than $\frac{3}{4}$



4. Jennifer wants to close off a rectangular area in her lawn so that she can leave her dog outside. She buys enough fencing to close off 252 square feet of lawn.

If the length of the enclosure is 21 feet, what is the width?

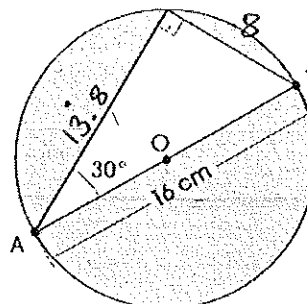
- A. 12 feet
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5. In the diagram below, line segment AT is a diameter of the circle with center O.

What is the area of the shaded part of the circle?

- A. 18.3 cm^2
 B. 42.3 cm^2
 C. 145.6 cm^2
 D. 194.1 cm^2

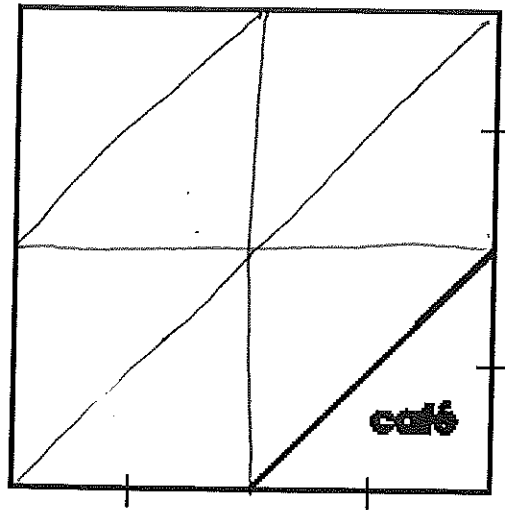


Circle: $\pi \cdot 8^2$
 $A = 201$
 triangle: $\frac{1}{2}(8)(13.8)$
 55.2

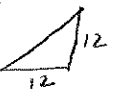
$201 - 55.2 = 145$

6. [SA] The floor plan of one room in a bookstore is a square with an area of 576 square feet. Part of this room is taken up by a café. The border of the café runs from the midpoints of two adjacent walls.

In your **Answer Document**, find the area, in square feet, of the café. Show your work or explain how you found your answer.



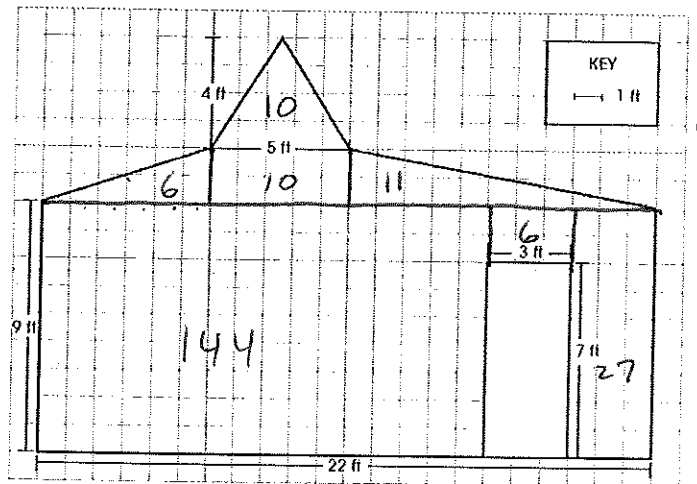
IF area of square is 576
 then the sides are 24
 $24 \cdot 24 = 576$

The café is 
 $\frac{1}{2}(12)(12) = 72$

OR $\frac{1}{8}(576) = 72$

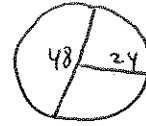
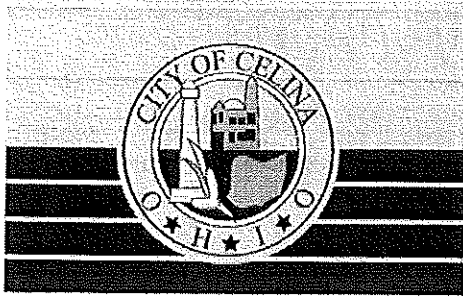
7. The diagram below shows the dimensions of a wall that needs to be painted. The door represented by the shaded rectangle is **not** to be painted.

In your **Answer Document**, determine the area, to the nearest square foot, of the wall that is to be painted. Show your work or provide an explanation for your answer.



TOTAL: 214

8. The city flag for Celina, Ohio, is shown below.



$$A = 3,14 \cdot 24^2$$

$$A = 1808,64$$

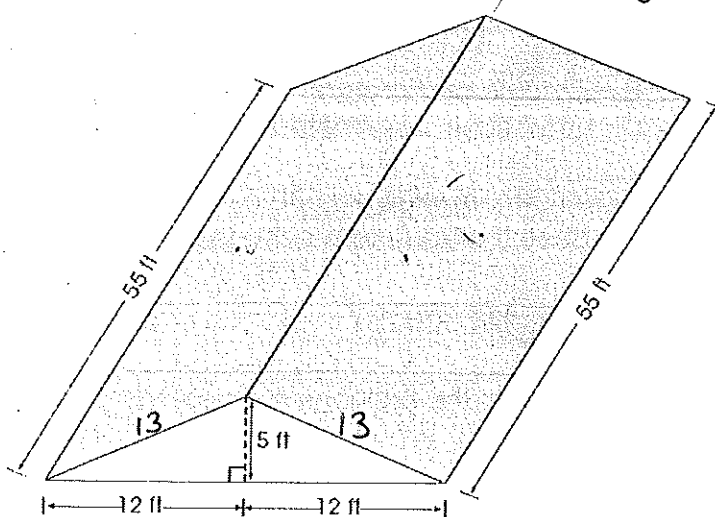
The flag has a total area of 5,472 square centimeters. In the center of the flag is a circular design. The diameter of this design is 48 centimeters. What is the approximate area of the flag that is **NOT** covered by the circular design?

$$5472 - 1808,64$$

$$3663,36$$

- A. 1,763 cm²
- B. 1,809 cm²
- C. 3,663 cm²
- D. 5,321 cm²

9. Tammy is roofing a house. She must buy enough shingles to cover the shaded rectangular areas on both sides of the roof, as shown in the diagram below.



$$a^2 + b^2 = c^2$$

$$5^2 + 12^2 = c^2$$

$$25 + 144 = c^2$$

$$169 = c^2$$

$$\sqrt{169} = c$$

$$13 = c$$

What is the area she must cover?

- A. 715 ft²
- B. 835 ft²
- C. 1,430 ft²
- D. 6,600 ft²

$$2(13)(55)$$

$$1430$$

* WRONG BUT REASONABLE

$$2(12)(55)$$

$$1320$$