PERIMETER AND AREA

PERIMETER AND AREA SUMMARY

POLYGONS

- Polygons are closed figures made up of three or more line segments.

PERIMETER

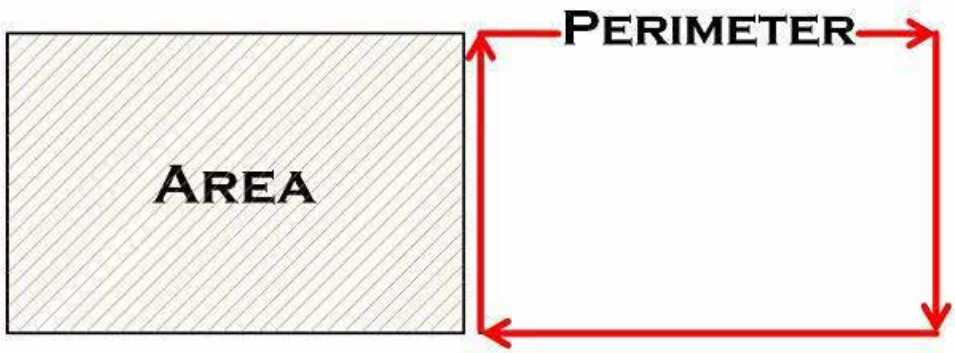
- The total length of external boundary of a closed figure in a plane is called its 'Perimeter'.
- Perimeter of Square = 4 x (Length of each side) Perimeter of Rectangle = 2 x (Length + Breadth)

AREA

- The space occupied in plane by a closed figure is called its 'Area'.
- Area of Square = (Length of each side) x (Length of each side)
- Area of Rectangle = Length x Breadth

CONVERSION OF UNITS

- The SI unit of length (or distance) is 'metre' which is denoted by 'm'.
- The unit for area can be converted as follows:
  $1m^2 = 10,000cm^2$
  $1cm^2 = 1/(10000)m^2$

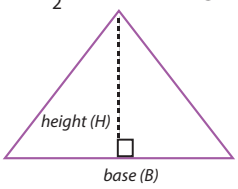


AREA PROBLEM 1

Help the Bunny's Family pick a new roof for their house.
The area of the new roof plus the area of the house has to be ***36*** square feet.

Review:

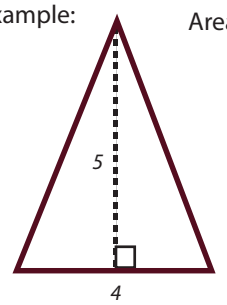
Triangle Area = $\frac{1}{2}$ x base x height



The base of a triangle can be any one of its sides.
The height is the distance from a base to its opposite point, or vertex.
A base must be perpendicular to its height.

The area of the house is 20 square feet

Example:

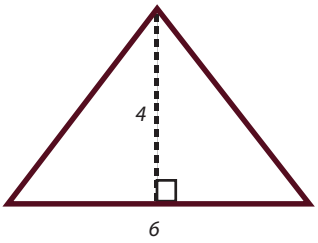


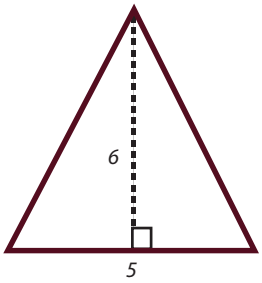
Area = $\frac{1}{2}$ x base x height

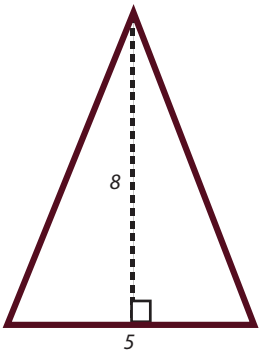
= $\frac{1}{2}$ x 4 x 5

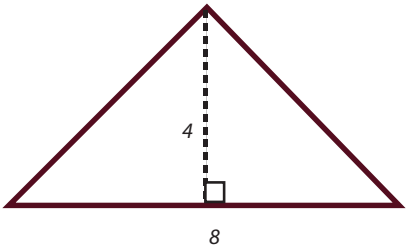
= 10

The area of this roof is 10 square feet.
The area of the house is 20 square feet.
The total area is 30 square feet.









Which roof should they pick? Circle it.

AREA PROBLEM 2

Help the Cat Family pick their new house. The area of the house has to be at least ***55*** square feet. Calculate the area of the house (don't forget to add in the area of the roof, too).

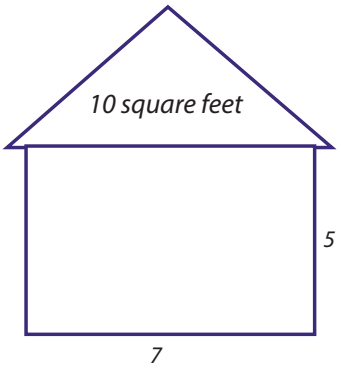
Review:

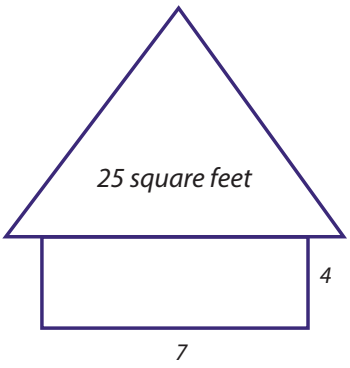
Rectangular Area =Length x Width

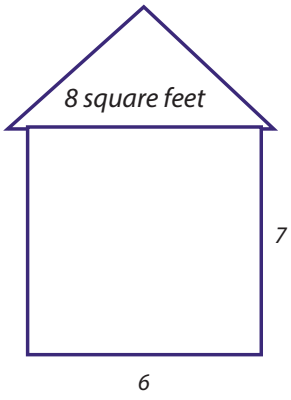
Example:

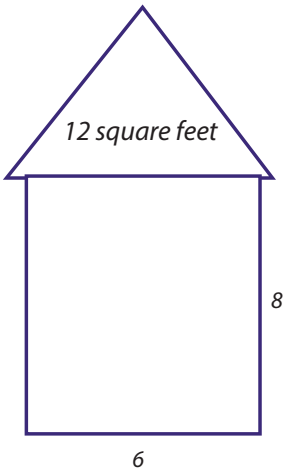
Area =7 x 5 = 35

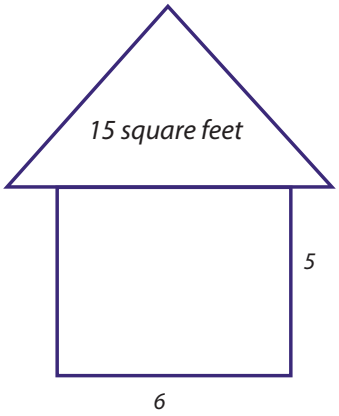
Total area = 35 + 10 = 45 square feet.









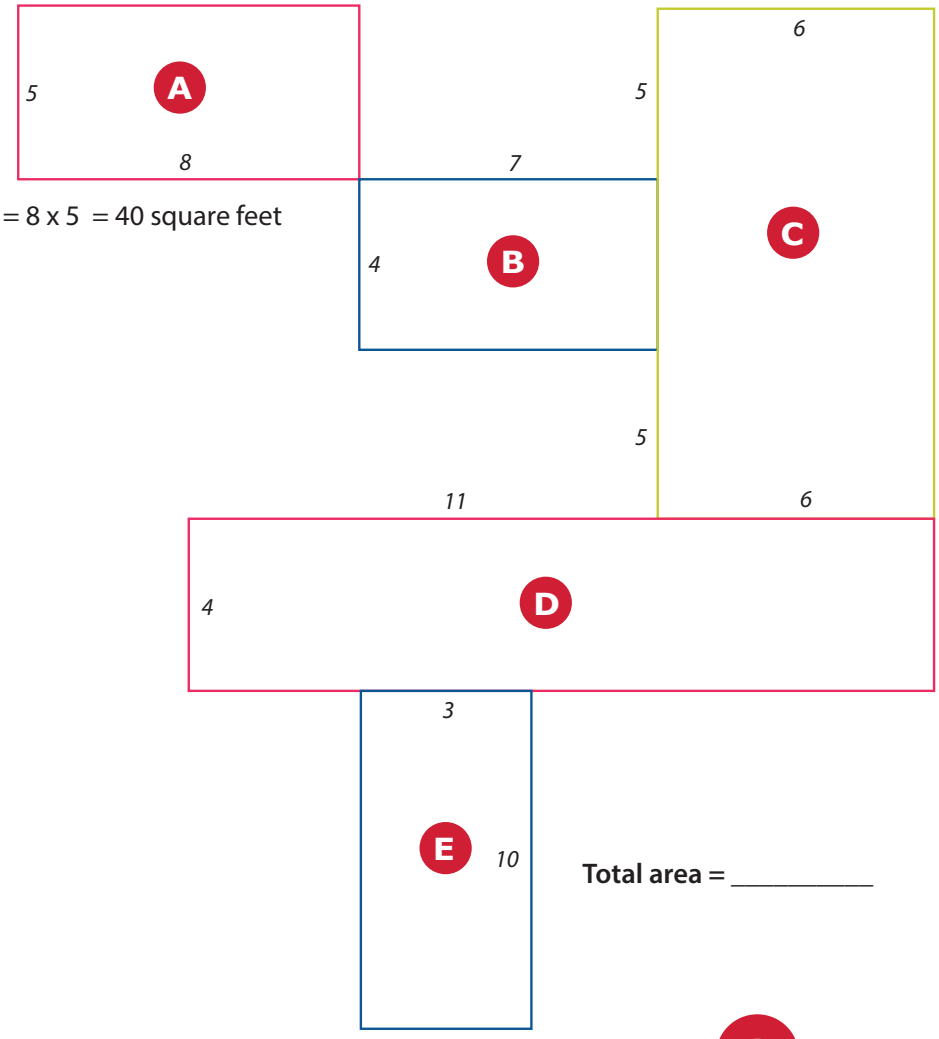


Which house should they pick? Circle it.

AREA PROBLEM 3

Peter the Painter is painting the side of this oddly shaped house. Look closely and you will see it's made up of many rectangles. Find the area of rectangle, then add all the numbers you find to get the total area. Do not forget to answer the special question below.
Remember: Area = length x width.

Example:
Area of wall **A** = 8 x 5 = 40 square feet



Total area = _____

Peter can paint 1 square foot of wall space in 10 minutes. How long will it take to paint these walls?

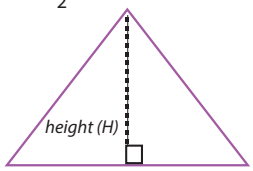
AREA PROBLEM 4

Help Mr.Tortoise find his new home. The total area of his place has to be at least ***60*** square feet. This includes the area of a roof (triangle) plus the area of the house (rectangle).

Review:

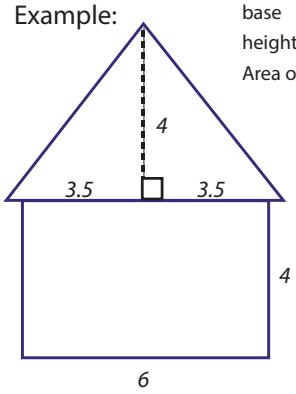
Rectangle Area = length x width

Triangle Area = $\frac{1}{2}$ x base x height



The base of a triangle can be any one of its sides.
The height is the distance from a base to its opposite point, or vertex.
A base must be perpendicular to its height.

Example:



base = 3.5 + 3.5 = 7

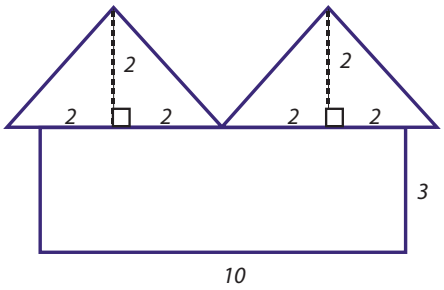
height = 4

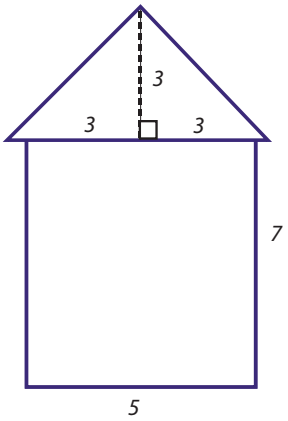
Area of the roof = $\frac{1}{2}$ x base x height

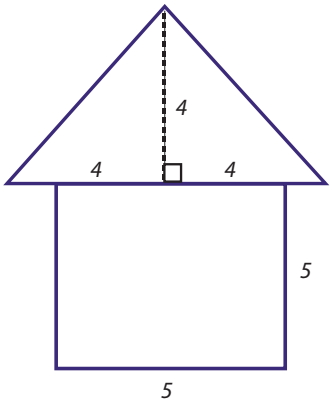
= $\frac{1}{2}$ x 7 x 4 = 14

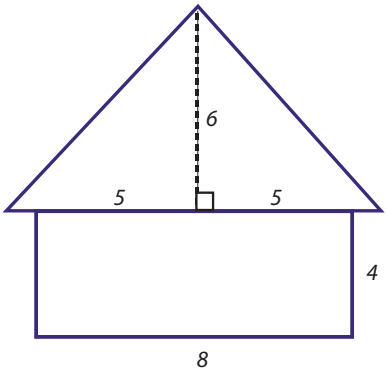
Area of the rectangle = 6 x 4 = 24

Total area = 14 + 24 = 38 square feet.





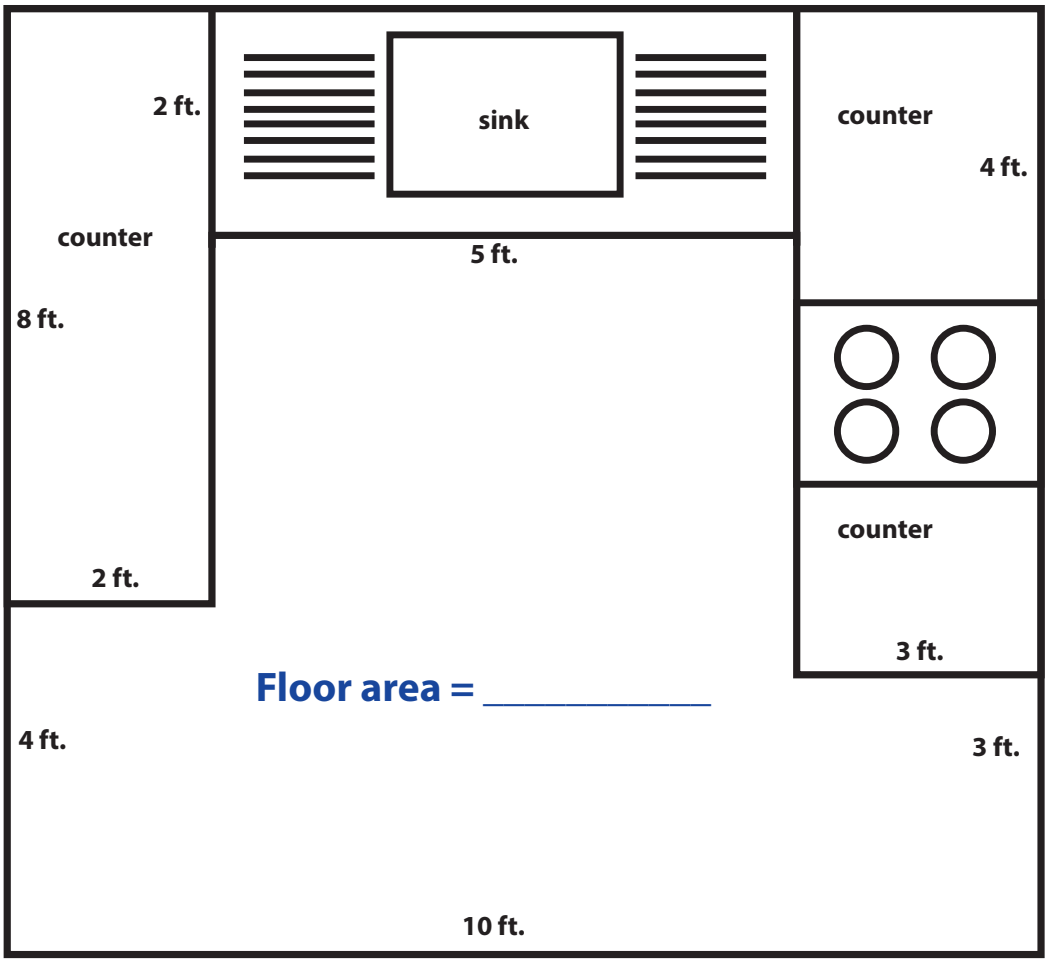




Which home should Mr.Tortoise move into? Circle it.

AREA PROBLEM 5

Help Aunt Annie renovate her kitchen.
Help her compare the cost of three different types of flooring.
Don't forget to subtract the area of the counters and oven. Review: Area = Length x Width



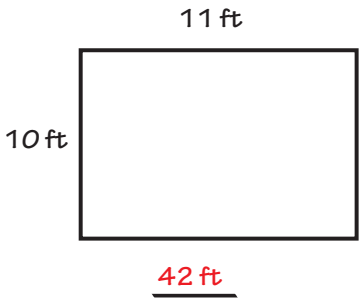
Challenge!

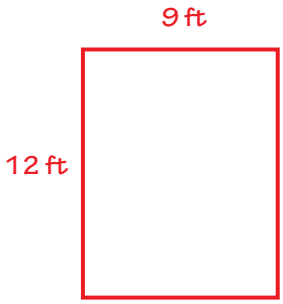
Each floor material costs a different amount. Which one's total is closest to ₹4500?

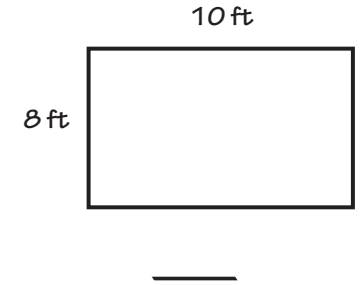
Marble	Granite	Wood
₹70 per sq.ft.	₹60 per sq.ft.	₹50 per sq.ft.

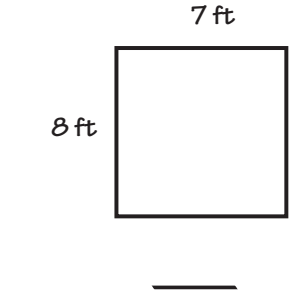
PERIMETER PRACTICE 1

Find the ***perimeter*** of each rectangle, then draw at least 2 rectangles that have the same perimeter.



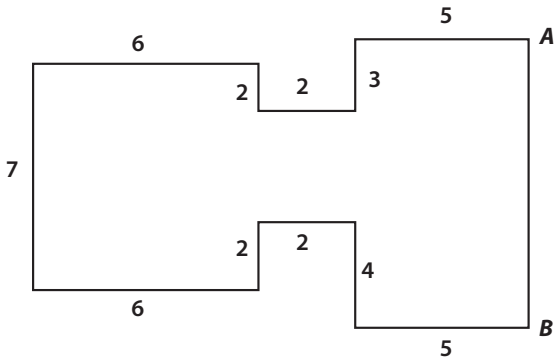






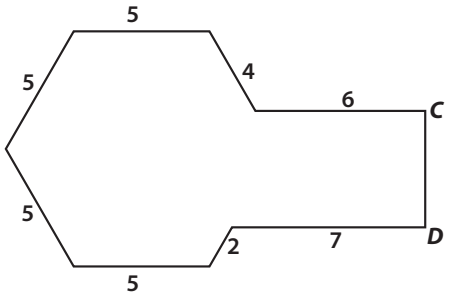
PERIMETER PRACTICE 2

Perimeter is the distance around a shape. It can be found by finding the sum of all the shape's sides. Look at the shapes below. Find the length of the missing sides using the information given. Write your answers in the space provided.



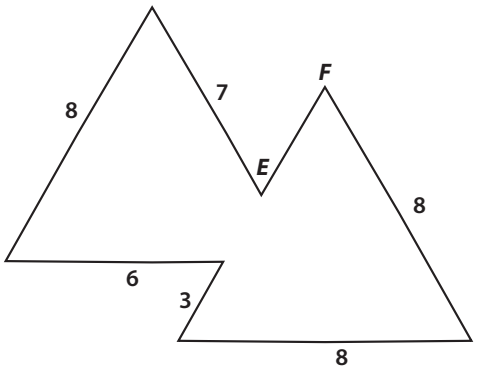
The perimeter of this object is ***54*** inches long.

Find the length of ***AB***.



The perimeter of this object is ***43*** inches long.

Find the length of ***CD***.

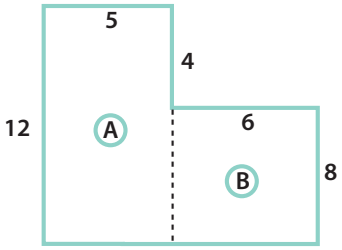


The perimeter of this object is ***43*** inches long.

Find the length of ***EF***.

AREA PRACTICE 1

Calculate the area of each compound shape. Remember, area = L x W. See the example.



1. Divide the compound shape into rectangles.
2. Calculate the area of each shape.
3. The area of shape A = 12 x 5
   = 60 sq. inches
4. The area of shape B = 6 x 8
   = 48 sq. inches

5. Combine the two areas = 60 + 48 = 108 sq. inches
   Therefore, the area of this compound shape is 108 sq. inches

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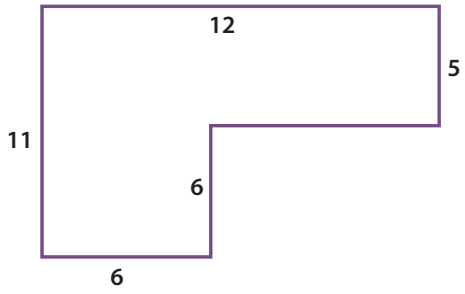
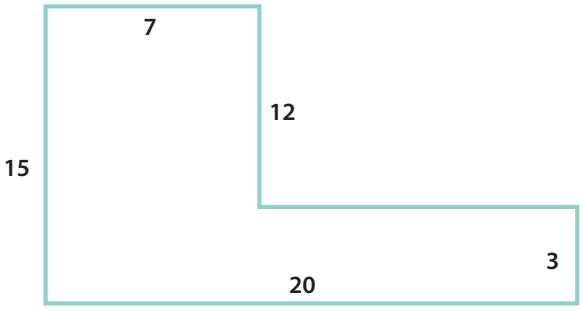
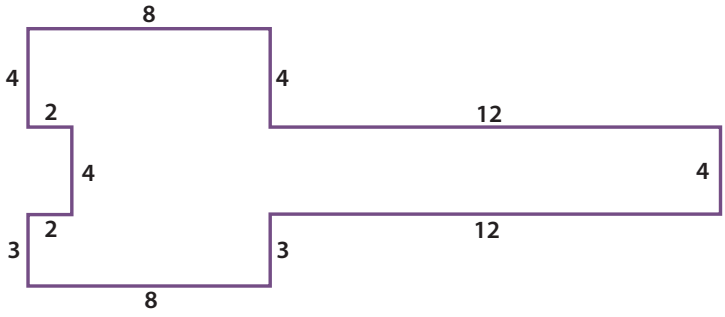




Challenge



AREA PRACTICE 2

Help Alan pick a room with the largest area in square feet.
Calculate the area of each room then write
the answer in the middle of the room.
Color in the largest one. Remember, Area = L x W