5th Basic

6th Advanced

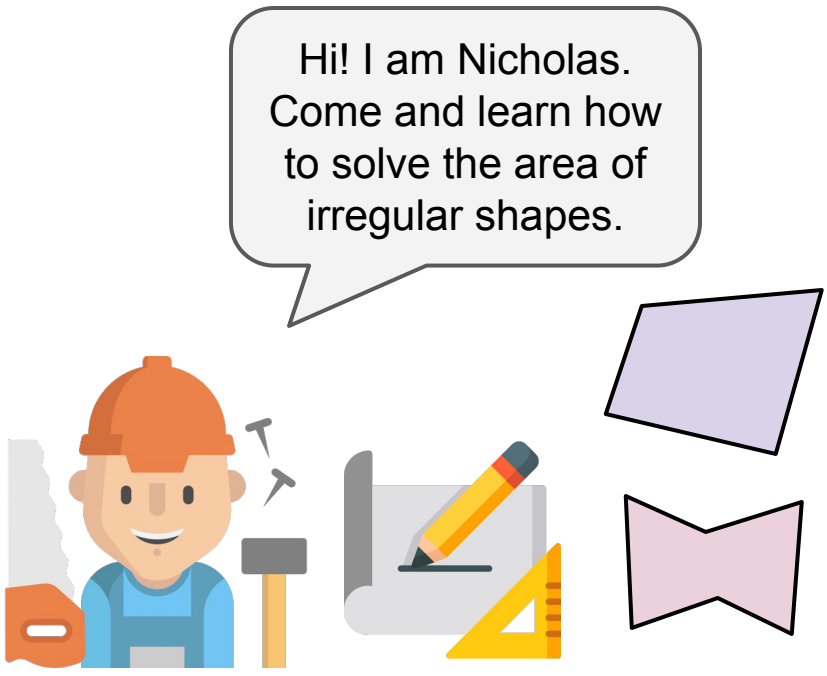
Helping With Math

USA GRADES

Area of Irregular Shapes

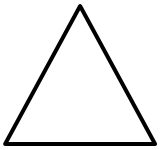
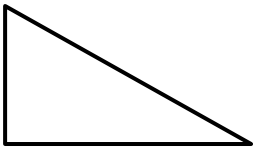
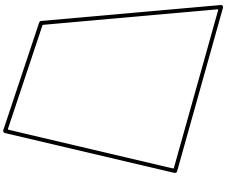
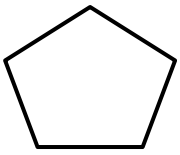
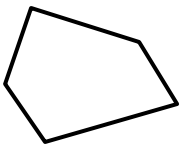
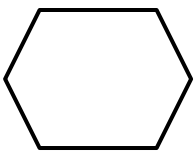
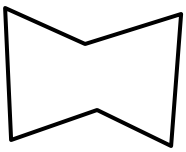
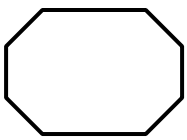
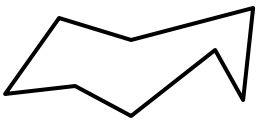
Suitable for students **aged 9-11**

This pack is suitable for learners aged 9-11 years old or 5th and 6th graders (USA). The content covers fact files and relevant basic and advanced activities involving area of irregular shapes.



- Irregular shape is a shape that has angles of different sizes and sides of different lengths.
- Compared to regular shapes, irregular shapes are often much harder to name because don't look like the more conventional regular shapes.

DIFFERENTIATING REGULAR SHAPES AND IRREGULAR SHAPES

Name	*Regular*	*Irregular*	*Number of Sides*
Triangle			*3*
Quadrilateral			*4*
Pentagon			*5*
Hexagon			*6*
Octagon			*8*

Notice how the regular shapes differ from irregular shapes. Observe the sides of the shape as well as the angles.

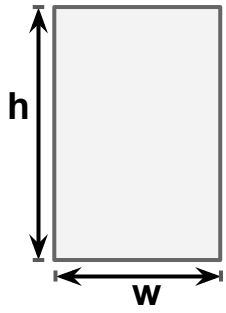
FINDING THE AREA OF THE IRREGULAR SHAPES

In finding the area of irregular shapes, you need to divide the irregular shape into regular shapes that you know such as rectangle, triangle, square, circle and etc.

Example:

Now, we can find the total area of the irregular shape by adding the areas of the regular shapes which we obtained from dividing the irregular shape.

AREA OF REGULAR SHAPES

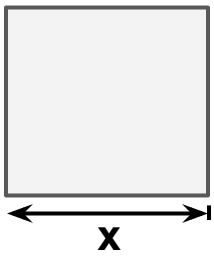


Rectangle

Formula: **A = l x w**

Where

- l = length
- w = width

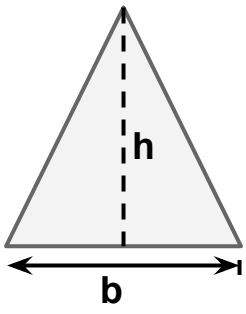


Square

Formula: **A = x^2**

Where

- x = side length of the square

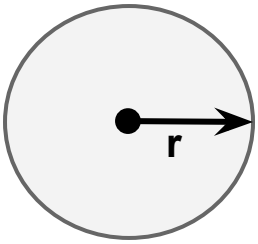


Triangle

Formula: **A = ½ (b x h)**

Where

- b = base
- h = height



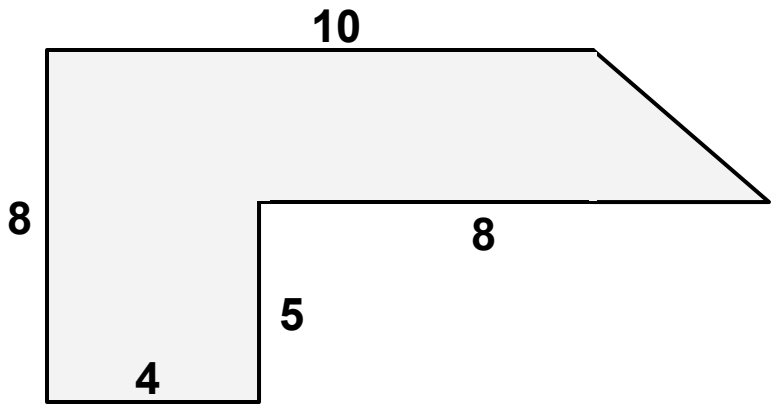
Circle

Formula: **A = πr²**

Where

- r = radius

LET'S PRACTICE!



1.) Divide the irregular shape into regular shapes. Illustrate it here.

2.) Find the total area of the irregular shape. Show your solution on the space provided.

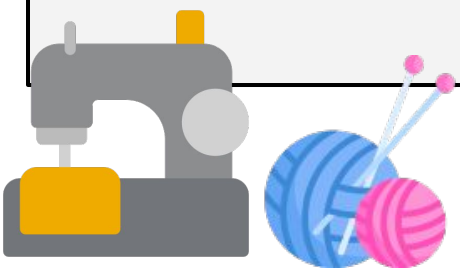


TABLE OF ACTIVITIES

Ages 9-10 (Basic)		5th Grade
1	Talent in Drawing	
2	Puzzle Enthusiast	
3	Structural Designer	
4	Dream University	
5	Math Quizzers	
Ages 10-11 (Advanced)		6th Grade
6	Engineering Student	
7	Let's Make Origami	
8	Into Landscaping	
9	Amanda, the Interior Designer	
10	Passion for Carpentry	

TALENT IN DRAWING

G5
Basic

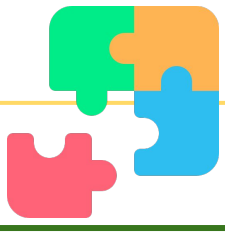
Show your talent in drawing by drawing 10 irregular shapes that you know. Remember that irregular shapes are shapes that have sides of different lengths and angles of different sizes.

PUZZLE ENTHUSIAST

G5 Basic

Lyka is a puzzle enthusiast. You can have a free tutorial session with her if you managed to answer and complete the table below based on the fact file. Write your answers on the space provided.

Name	*Regular*	*Irregular*	*Number of Sides*
1.) Triangle			
2.)Quadrilateral			
3.) Pentagon			
4.) Hexagon			
5.) Octagon			

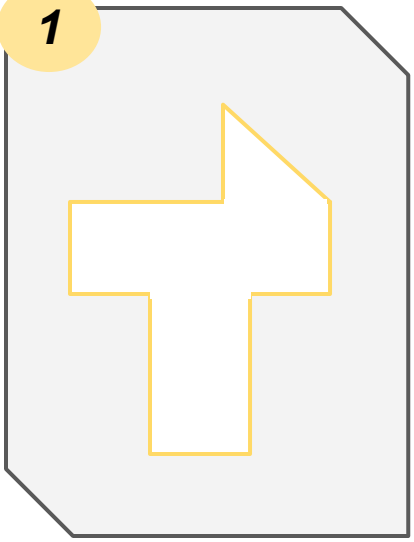


STRUCTURAL DESIGNER

G5 Basic

Dan is a structural designer. He wants you to answer this activity by dividing the irregular shapes into regular shapes. Use dash line in dividing the irregular shapes.

1



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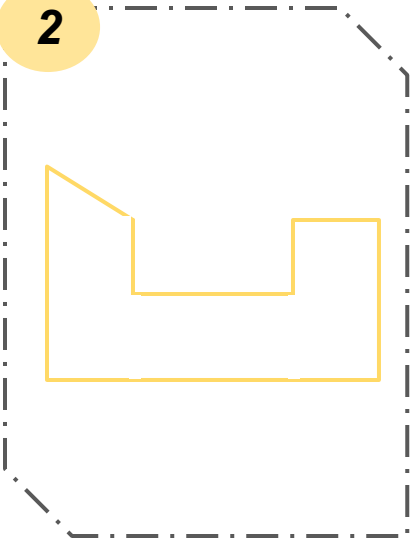

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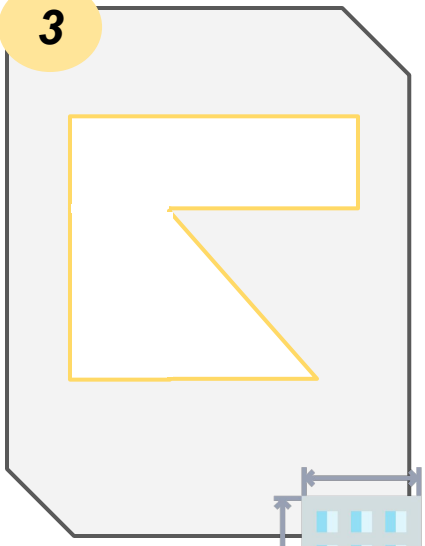

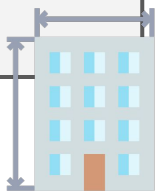

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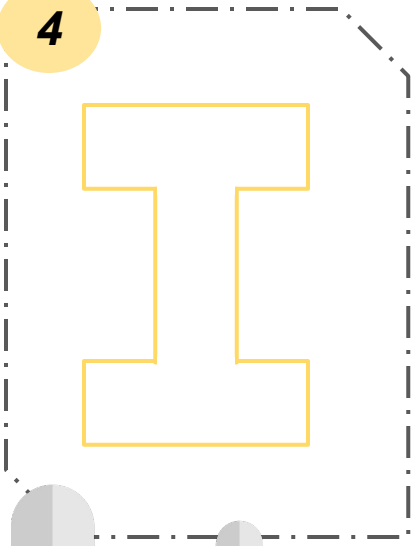

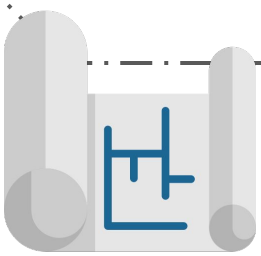

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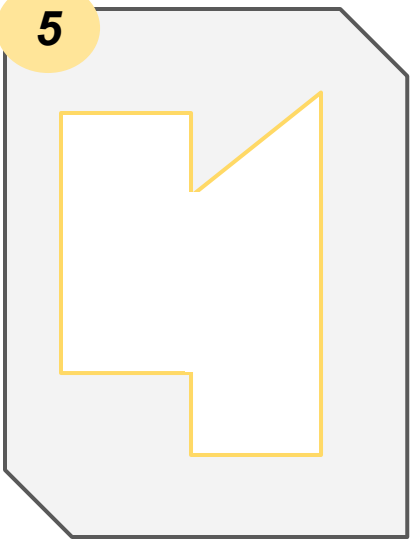

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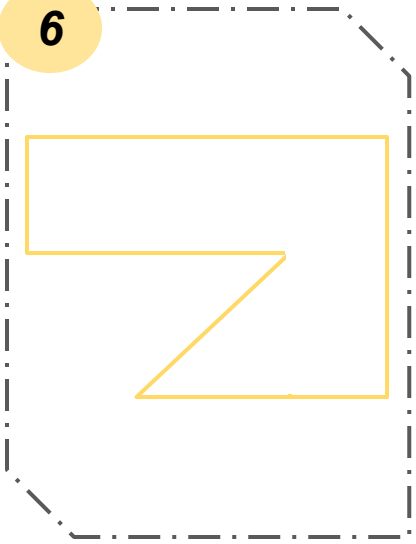
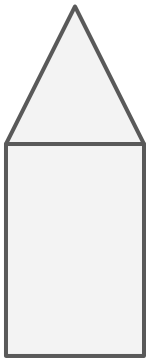


DREAM UNIVERSITY

G5 Basic

You will be admitted to your dream architecture university if you managed to draw an irregular shape according to the conditions given below.

1



1 rectangle & 1 triangle

2

2 rectangles & 1 triangle

3

1 rectangle &
2 triangles

4

2 rectangles &
2 triangles

5

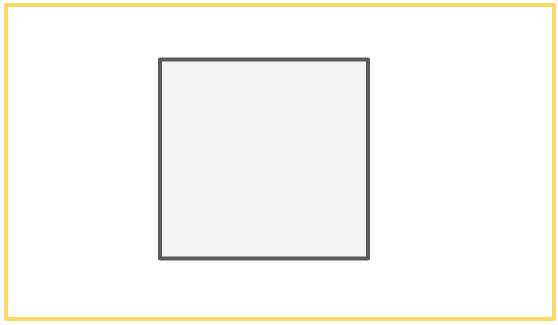
3 rectangles &
1 triangle

MATH QUIZZERS

G5 Basic

You will be joining the team of math quizzers if you managed to answer the following. Determine the formula used in solving the area of the following regular shapes. Write your answers on the space provided.

1



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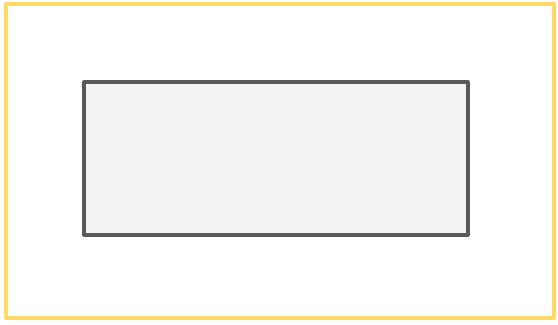

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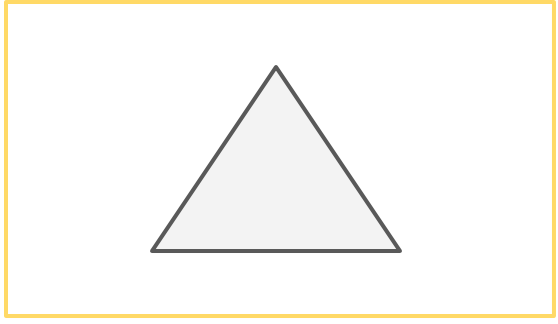

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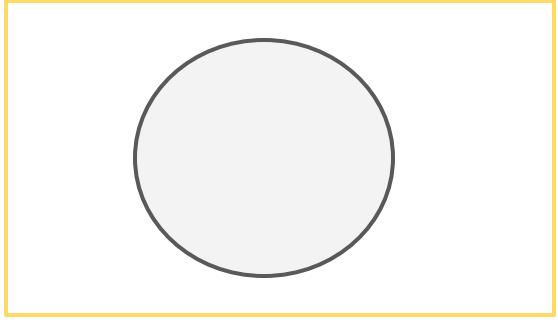
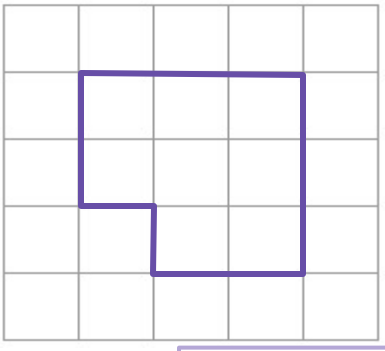


ENGINEERING STUDENT

G6 Advanced

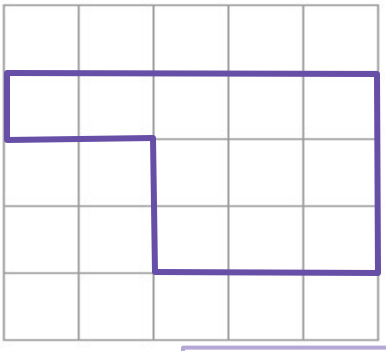
As an engineering student, you are assigned to find the area of the figures below. Count each box to know the area. Each square measures 1 unit ^{2}. Item number 1 is for your reference.

1



8 units ^{2}

2



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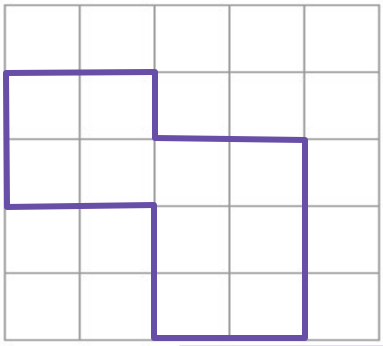

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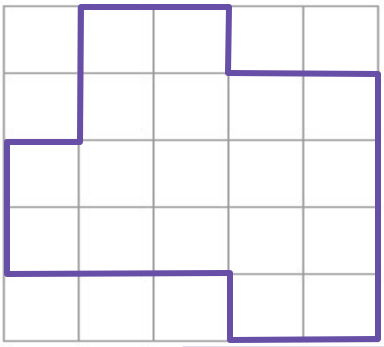

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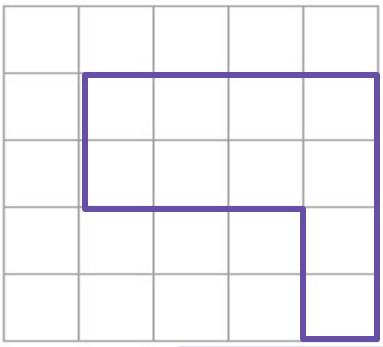

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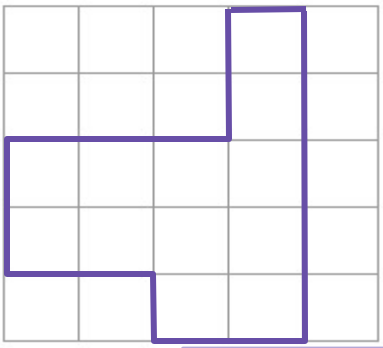
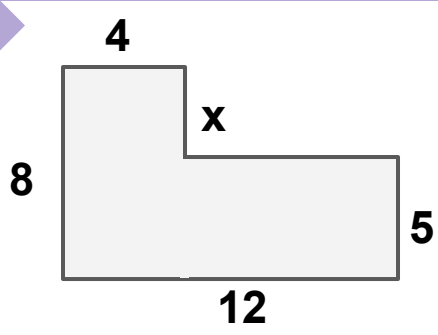


LET'S MAKE ORIGAMI

G6 Advanced

Hilda is good at making origami. She sells all origami in her town to be able to donate to a charity. Help her make good origami by finding the value of x in each irregular shape. Show your solution on the space provided.

1



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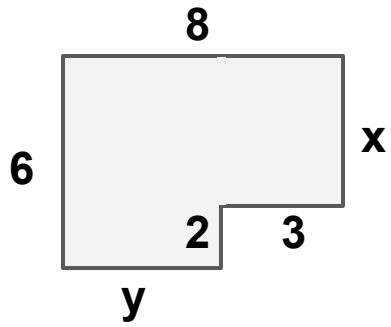

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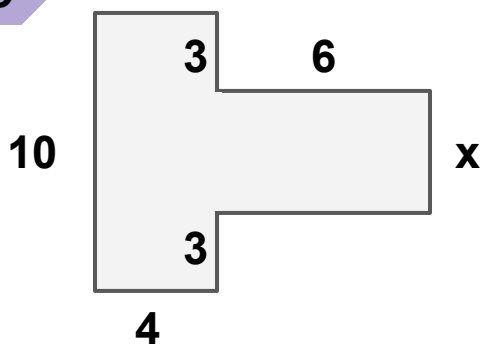

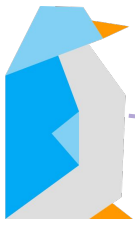

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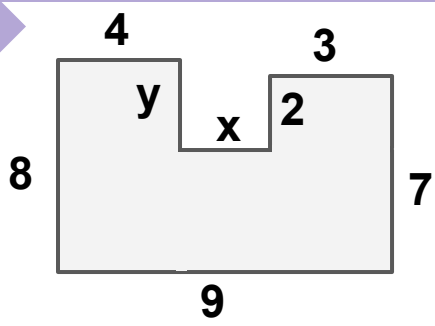
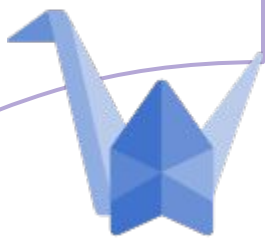


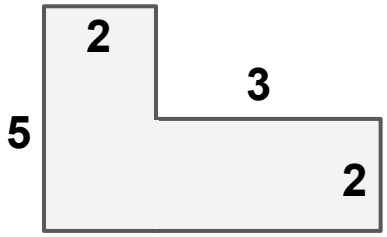


INTO LANDSCAPING

G6 Advanced

Alex has a talent in landscaping. He makes landscapes attractive to the eyes of everyone who sees it. Help him make even more attractive ones by finding the area of the land/irregular shapes below. Show your solution on the space provided.

1



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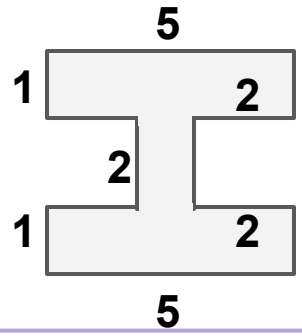

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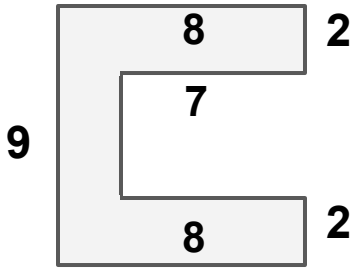

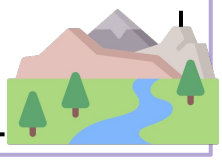

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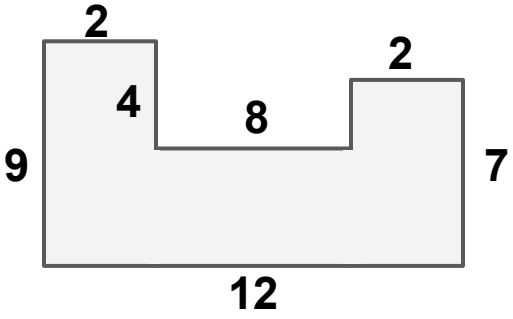
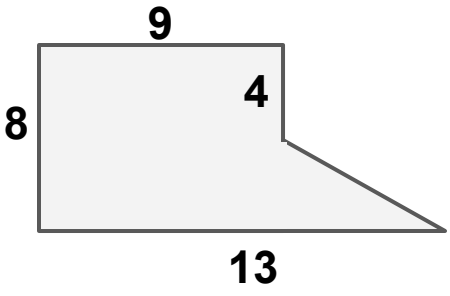
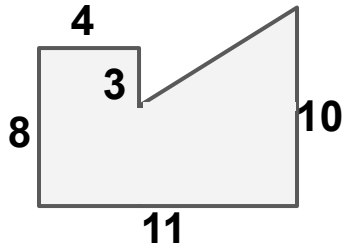


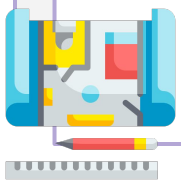
AMANDA, THE INTERIOR DESIGNER

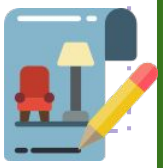
G6 Advanced

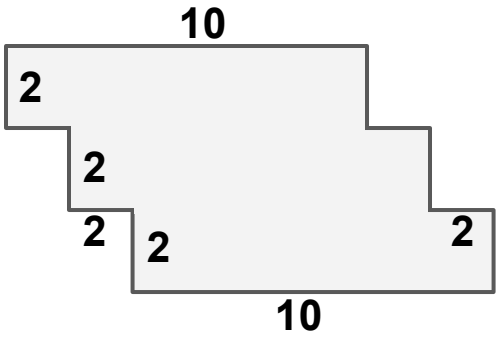
Interior designing is Amanda's thing. Help her find the area of the house interiors below for her to design it perfectly. Show your solution on the space provided.

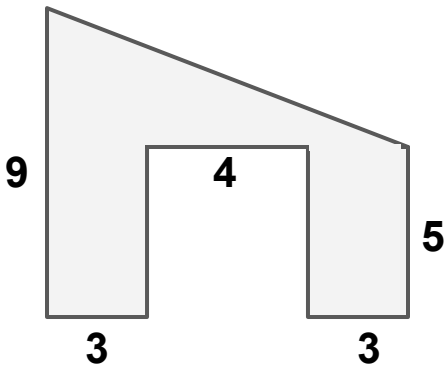


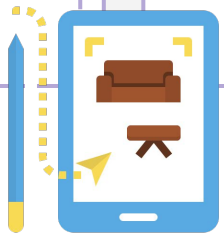








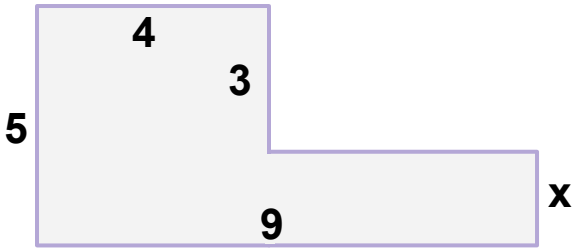


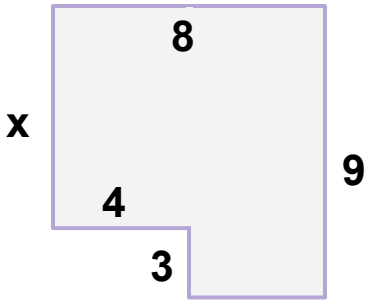


PASSION FOR CARPENTRY

G6 Advanced

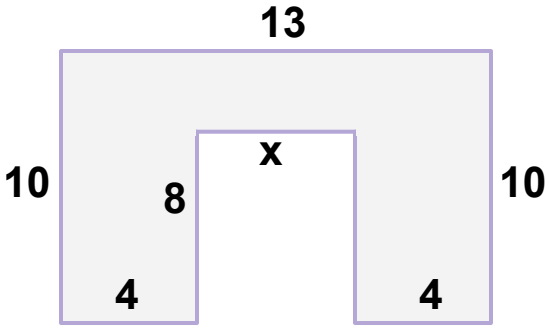
Derrick is into carpentry since he was young. Help him build the shelves that he wants for his room. Find the value of x and solve for the area of the irregular shapes below. Show your solution on the space provided.

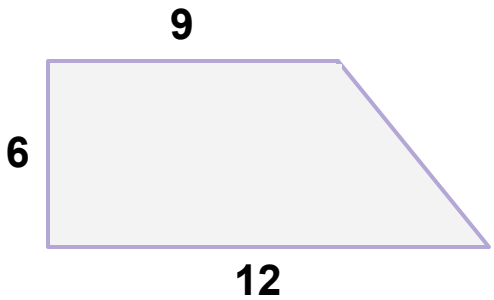




1

2





3

4

ANSWER GUIDE

Activity 1

Learners' answers may vary.

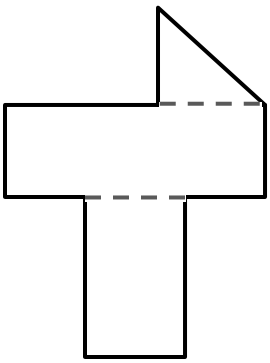
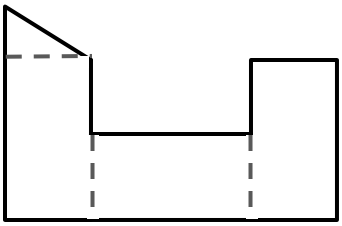
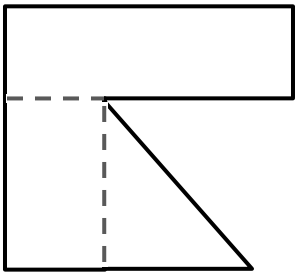
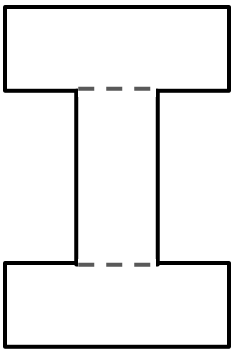
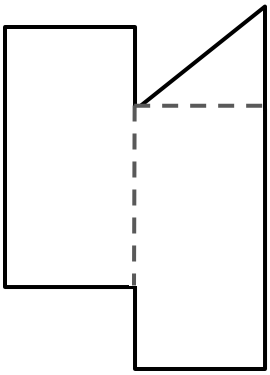
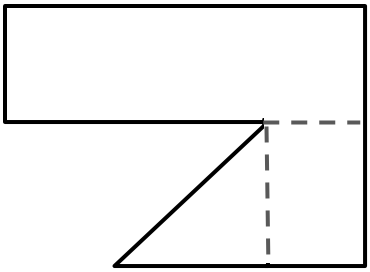
Activity 2

Possible answers:

Name	Regular	Irregular	Number of Sides
1.) Triangle			3
2.Quadrilateral			4
3.) Pentagon			5
4.) Hexagon			6
5.) Octagon			8

ANSWER GUIDE

Activity 3

Activity 4

Learners' answers may vary.

Activity 5

1.) $A = a^2$

2.) $A = l \times w$

3.) $A = \frac{1}{2} bh$

4.) $A = \pi r^2$

ANSWER GUIDE

Activity 6

1.) A = 8 unit ^{2}
2.) A = 11 unit ^{2}
3.) A = 10 unit ^{2}
4.) A = 18 unit ^{2}
5.) A = 10 unit ^{2}
6.) A = 12 unit ^{2}

Activity 7

1.) 8 - 5 = **x**
x = 3

2.) 2 + x = 6
x = 4
y + 3 = 8
y = 5

3.) 10 - 3 - 3 = **x**
x = 4

4.) 4 + x + 3 = 9
x = 2
y + (7 - 2) = 8
y = 3

Activity 8

1.) A = l x w
A_1 = 2 x 5 = 10
A_2 = 3 x 2 = 6
Total Area = 10 + 6
Total Area = 16 unit ^{2}

2.) A = l x w
A_1 = 5 x 1 = 5
A_2 = 5 x 1 = 5
A_3 = 2 x 1 = 2
Total Area = 5 + 5 + 2
Total Area = 12 unit ^{2}

3.) A = l x w
A_1 = 8 x 2 = 16
A_2 = 8 x 2 = 16
A_3 = 5 x 1 = 5
Total Area = 16 + 16 + 5
Total Area = 37 unit ^{2}

4.) A = l x w
A_1 = 9 x 2 = 18
A_2 = 7 x 2 = 14
A_3 = 8 x 5 = 40
Total Area = 18 + 14 + 40
Total Area = 72 unit ^{2}

ANSWER GUIDE

Activity 9

1.) $A_{\square} = l \times w$
$A_{\triangle} = \frac{1}{2} bh$
$A_1 = 9 \times 8 = 72$
$A_2 = \frac{1}{2} (4 \times 4) = 8$
Total Area = 72 + 8
Total Area = 80 unit ^{2}

2.) $A_{\square} = l \times w$
$A_{\triangle} = \frac{1}{2} bh$
$A_1 = 8 \times 4 = 32$
$A_2 = 7 \times 5 = 35$
$A_3 = \frac{1}{2} (7 \times 5) = 17.5$
Total Area = 32 + 35 + 17.5
Total Area = 84.5 unit ^{2}

3.) $A = l \times w$
$A_1 = 10 \times 2 = 20$
$A_2 = 10 \times 2 = 20$
$A_3 = 10 \times 2 = 20$
Total Area = 10 + 10 + 10
Total Area = 30 unit ^{2}

2.) $A_{\square} = l \times w$
$A_{\triangle} = \frac{1}{2} bh$
$A_1 = 5 \times 3 = 15$
$A_2 = 5 \times 3 = 15$
$A_3 = \frac{1}{2} (10 \times 4) = 20$
Total Area = 15 + 15 + 20
Total Area = 50 unit ^{2}

Activity 10

1.) $3 + x = 5$
x = 2
$A = l \times w$
$A_1 = 5 \times 4 = 20$
$A_2 = 2 \times 5 = 10$
Total Area = 20 + 10
Total Area = 30 unit ^{2}

2.) $x + 3 = 9$
x = 6
$A = l \times w$
$A_1 = 6 \times 8 = 48$
$A_2 = 3 \times 4 = 12$
Total Area = 48 + 12
Total Area = 60 unit ^{2}

ANSWER GUIDE

3.) $4 + x + 4 = 13$

$x = 5$

$A = l \times w$

$A_1 = 10 \times 4 = 40$

$A_2 = 10 \times 4 = 40$

$A_3 = 2 \times 5 = 10$

Total Area = 40 + 40 + 10

Total Area = 90 unit ^{2}

4.) $A_{\square} = l \times w$

$A_{\triangle} = \frac{1}{2} bh$

$A_1 = 6 \times 9 = 54$

$A_2 = \frac{1}{2} (6 \times 3) = 9$

Total Area = 54 + 9

Total Area = 63 unit ^{2}

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