3rd Basic

4th Advanced

Helping With Math

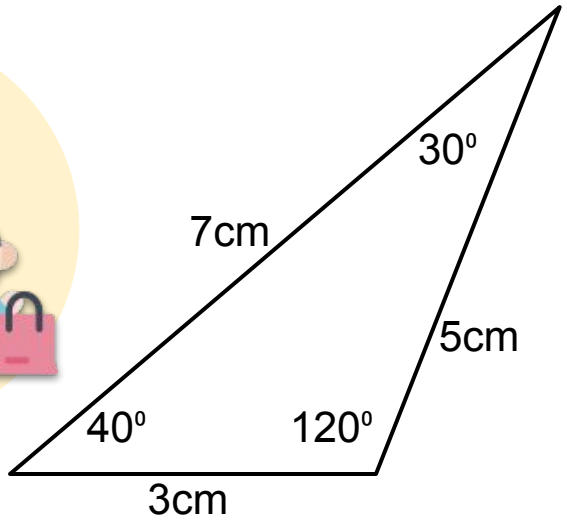
USA GRADES

Obtuse Triangles

Suitable for students **aged 7-9**

This pack is suitable for learners aged 7-9 years old or 3rd to 4th graders (USA). The content covers fact files and relevant basic and advanced activities involving obtuse triangles.

An **obtuse triangle** is a triangle containing one angle measuring greater than 90º.

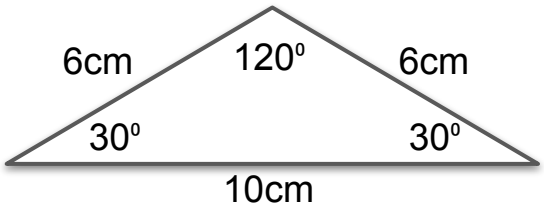


REMEMBER!

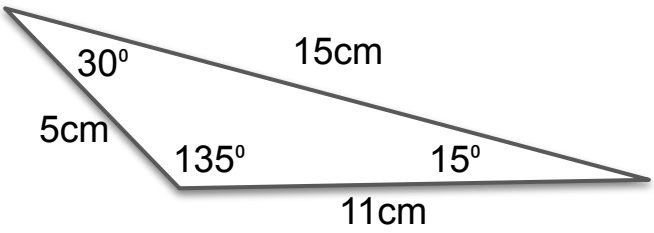
★ The sum of all sides of a triangle will always be 180º. Therefore, if one angle of a triangle is obtuse the other two triangles are automatically acute or less than 90º.

★ The side opposite the obtuse angle is the longest.

TYPES OF OBTUSE TRIANGLES



Isosceles Obtuse Triangle

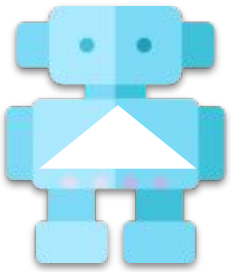


Scalene Obtuse Triangle

Isosceles Obtuse Triangle: one angle measures more than 90° while two sides and two angles have equal measurements.

Scalene Obtuse Triangle: one angle measures more than 90° while all sides and all angles have unequal measurements.

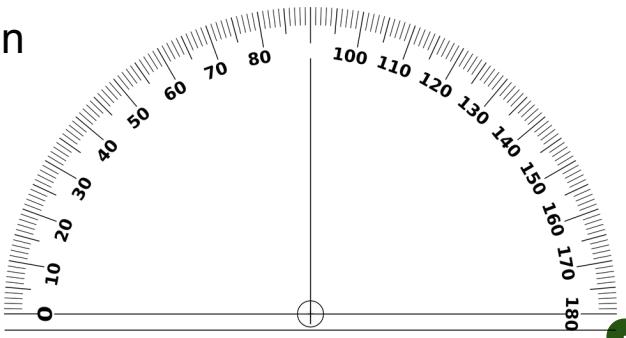
OBTUSE TRIANGLES IN REAL LIFE



MEASURING OBTUSE TRIANGLES

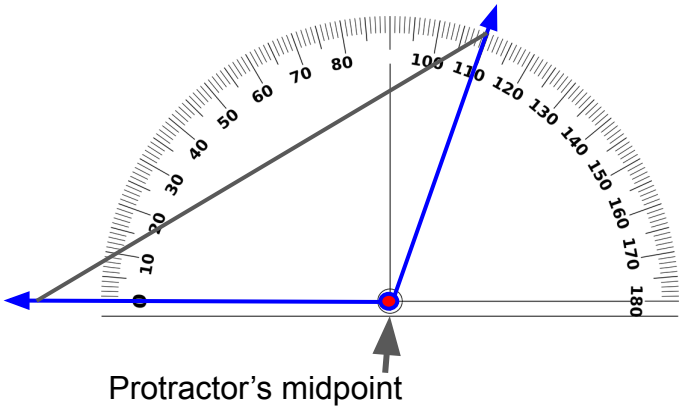
A **protractor** is a tool that we can use to measure angles.

It is usually a flat semicircular form with the angle degrees marked on the curved side.

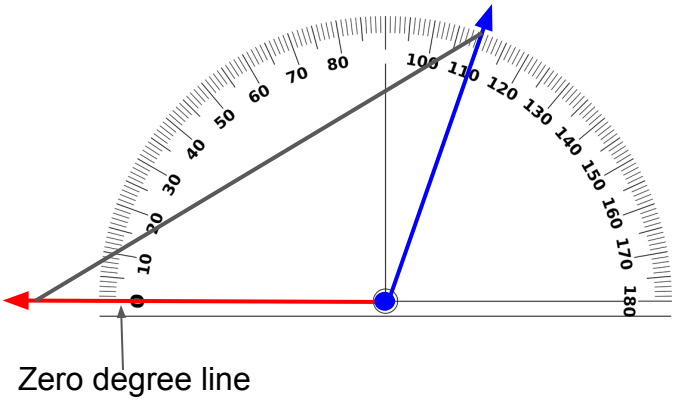


USING A PROTRACTOR

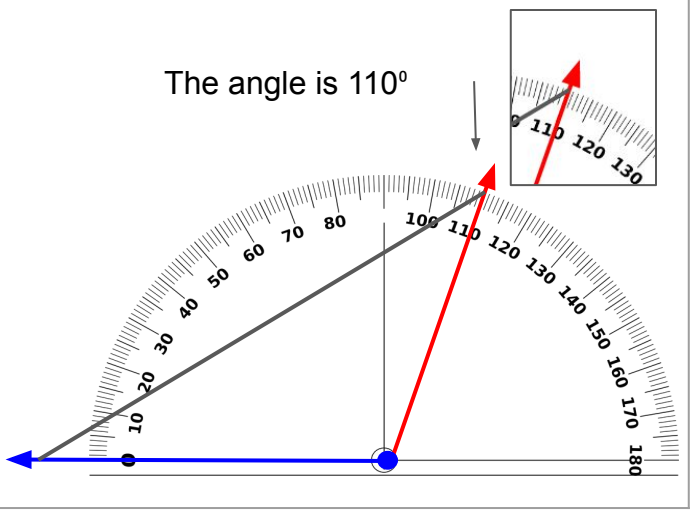
1. Position the protractor so that the vertex of the angle you are measuring is aligned with the protractor's midpoint.



2. Make sure that one side of the angle is lined up with the zero degree line of the protractor



3. Once the angle and protractor are properly positioned, check the other side of the angle that touches the measuring scale and count the degree lines.



Once you have measured all angles and find one angle measuring **<u>greater than</u>** 90⁰,
then you have confirmed that it is an obtuse triangle.

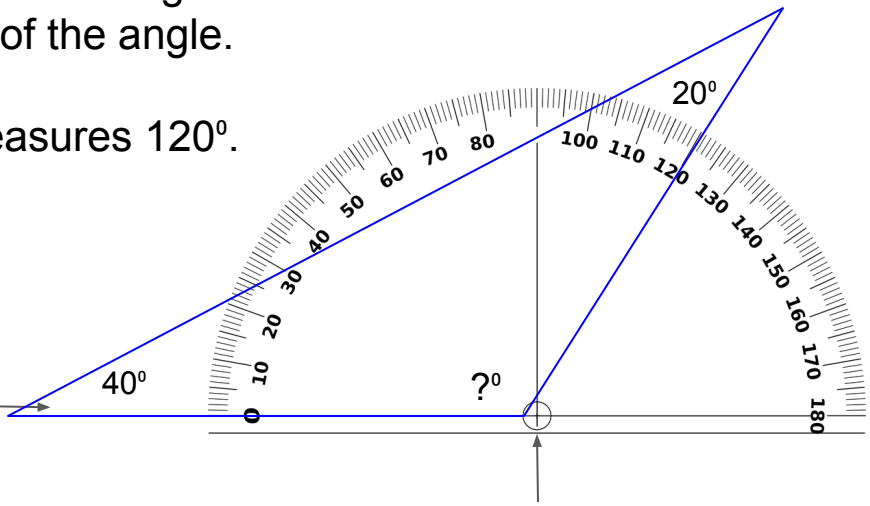
MEASURING OBTUSE TRIANGLES

Example 1:

c. Check the degree measurement of the other side of the angle.

It measures 120⁰.

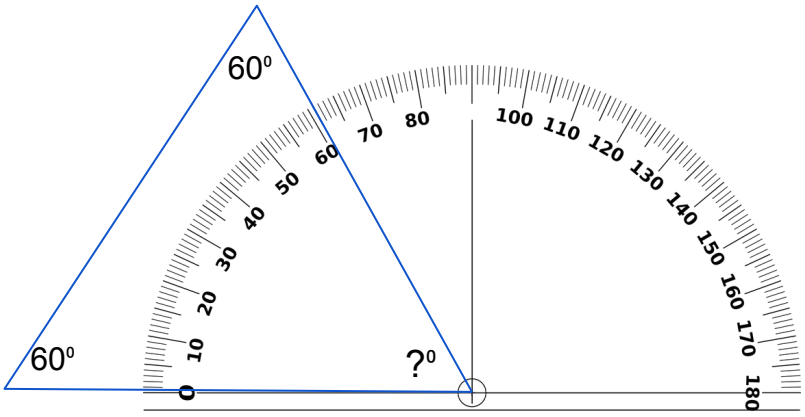
b. One angle lined up with zero degree line



a. Angle vertex aligned with protractor's midpoint

The angle measures 120 ⁰.
It is more than 90⁰.
Therefore, this is an obtuse triangle.

Example 2:

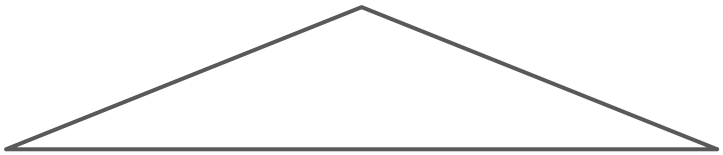


The angle in this triangle measures 60⁰.
There are no sides measuring more than 90⁰.
This is not an obtuse triangle.

MEASURING OBTUSE TRIANGLES EXERCISES

Try measuring the degrees of these triangles and note down if these are obtuse triangles or not.

1.



2.

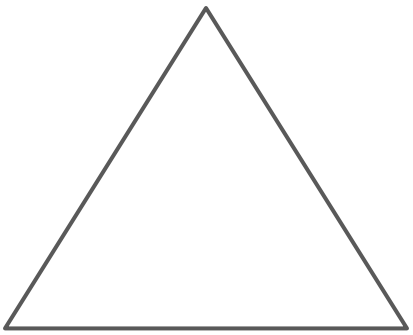


TABLE OF ACTIVITIES

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OPENING DAY

G3
Basic

A new toy store opened up around the corner with all the latest toys and gadgets you could find. Let's visit the store and check out the selection. There are 10 obtuse triangles in the below picture. Encircle each obtuse triangle you find. You may use a protractor for measuring.

FEATURED SELECTION

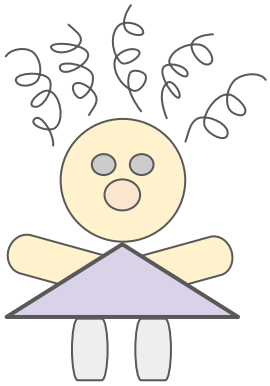
G3
Basic

Happy Toy Palace offers a wide range of toys. From traditional to modern items, everyone is sure to find what they are looking for. Below are some featured items of Happy Toy Palace. Encircle the letter of the item that contains the obtuse triangle.

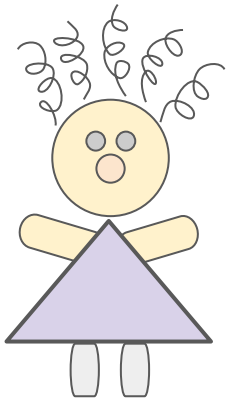
1.

a.

45^0
30^0
115^0



b.

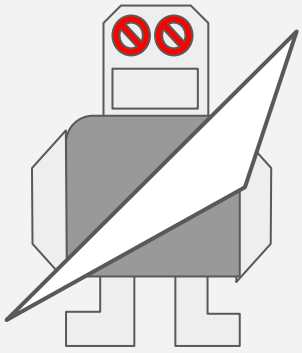


50^0
80^0
50^0

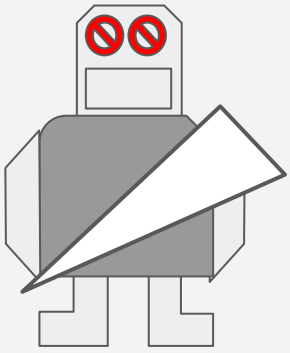
2.

a.

15^0
135^0
30^0



b.

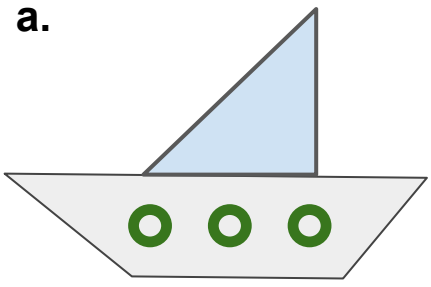


20^0
90^0
70^0

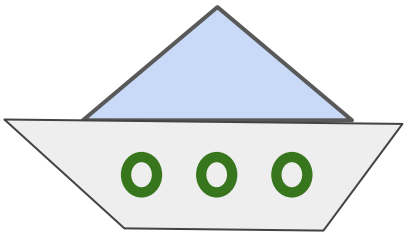
3.

a.

45^0
90^0
45^0



b.



40^0
40^0
100^0

THE DOLL HOUSE

G3
Basic

There is an almost life-sized doll house at the Happy Toy Palace. Let's explore it. Go through the different house levels by answering the question on each number.

1. An obtuse triangle is a triangle with an angle _____ 90º.

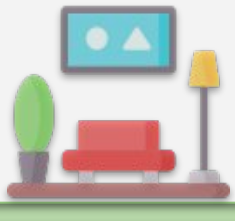
Answer:

_____

2. If an obtuse triangle has two 30º angles, which type of obtuse triangle is this?

Answer:

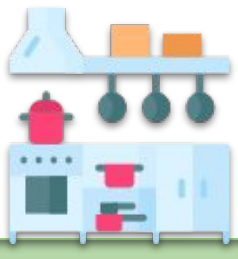
_____



3. A triangle has a 35º angle and a 45º angle, which type of obtuse triangle is this?

Answer:

_____

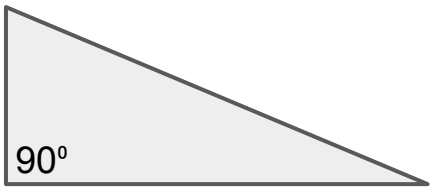


HELLO ROBOTO

G3 Basic

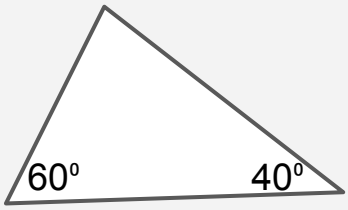
Say "Hello Roboto" to Happy Toy Palace's, robot assistant. The robot is able to assist you around the store. Let 'Hello Roboto' know what you are looking for. Mark yes or no to answer if each triangle is an obtuse triangle or not.

1.



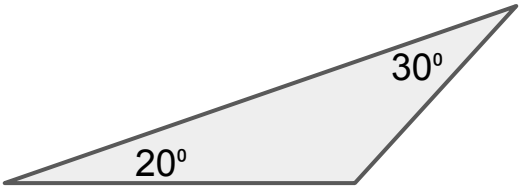
❑ Yes
❑ No

2.



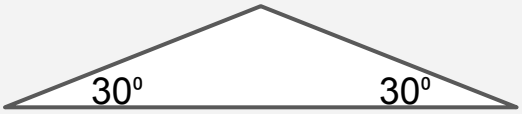
❑ Yes
❑ No

3.



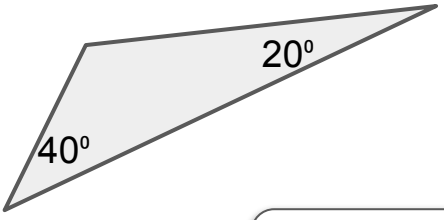
❑ Yes
❑ No

4.

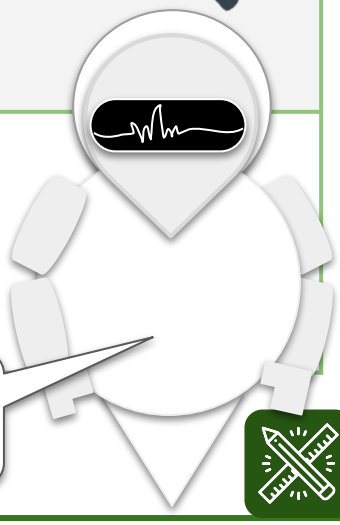


❑ Yes
❑ No

5.



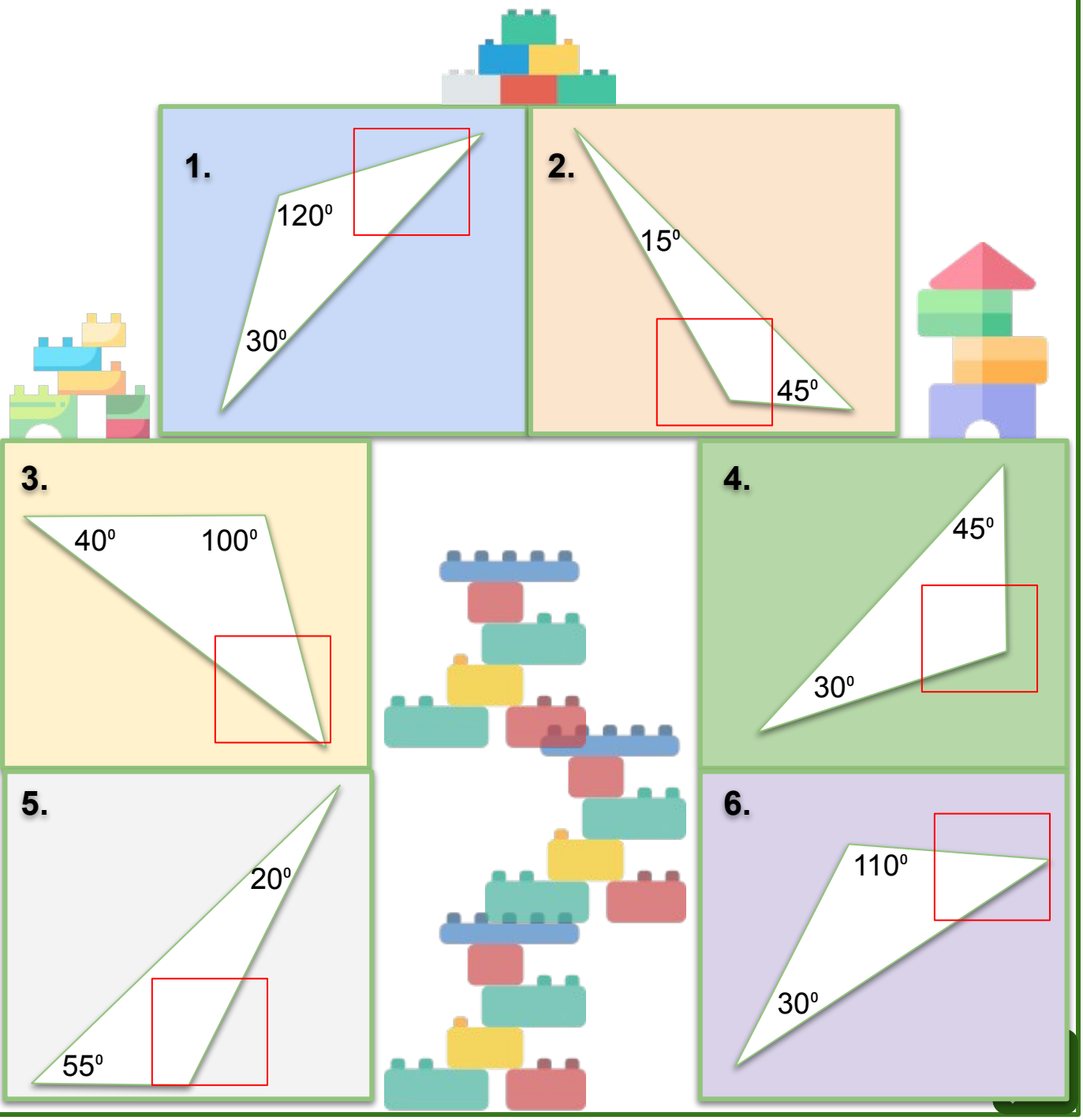
❑ Yes
❑ No



BUILDING BLOCKS

G3
Basic

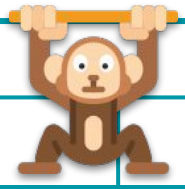
There is a station for building blocks where customers or visitors can create creative and imaginative structures. Let us create our own. Supply the missing value for each obtuse triangle in each building block below.

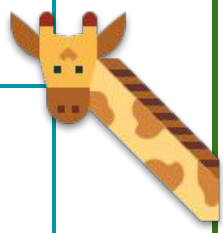


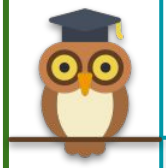
ANIMAL WORLD

G4 Advanced

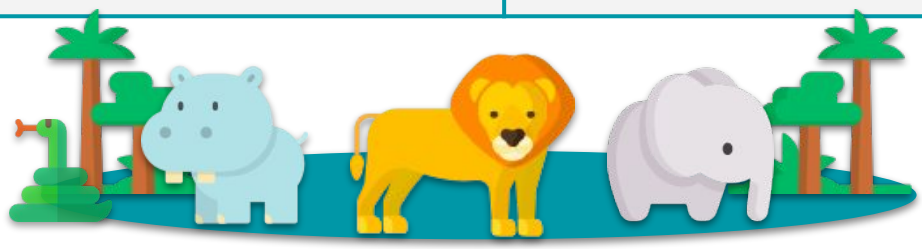
There is a special place for animal lovers in Happy Toy Palace. A whole level with all kinds of stuffed animals in all sizes. Let's take a peek and maybe take one of the cute cuddlies home. Under Column A, encircle the letter with angle measurements of an obtuse triangle. Write down which type of obtuse triangle, under Column B.







	Column A	Column B
1.	A.92⁰, 33⁰, 55⁰ B. 52⁰, 76⁰, 52⁰	
2.	A. 48⁰, 90⁰, 42⁰ B. 112⁰, 34⁰, 34⁰	
3.	A. 63⁰, 22⁰, 92 B. 45⁰, 90⁰, 45⁰	
4.	A. 113⁰, 23⁰, 44⁰ B. 80⁰, 55⁰,45⁰	
5.	A.74⁰, 26⁰, 80⁰ B. 98⁰, 51⁰, 31⁰	
6.	A. 150⁰, 15⁰, 15⁰ B. 43⁰, 52⁰, 85⁰,	



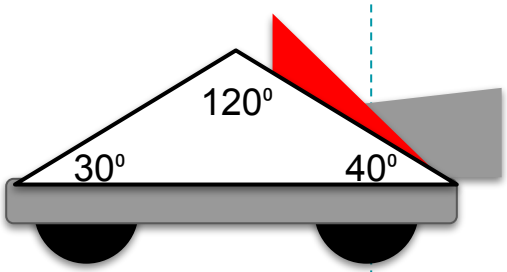
MOTORLAND

G4 Advanced

Ready, set, go! A couple of people are about to start a race in the Motorland Station. Let us join the race. Use your protractors to measure the angles of these triangle cars. Encircle the incorrect values and replace it with the correct value. Show your solution. Also, note down the type of obtuse triangle.

1. Correct Value:

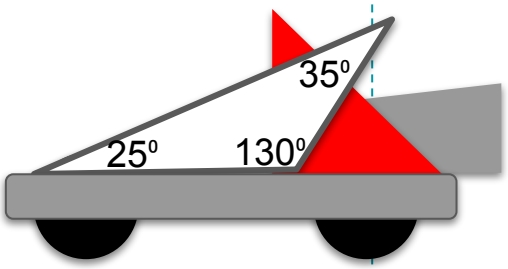
Solution:



Type of obtuse triangle:

2. Correct Value:

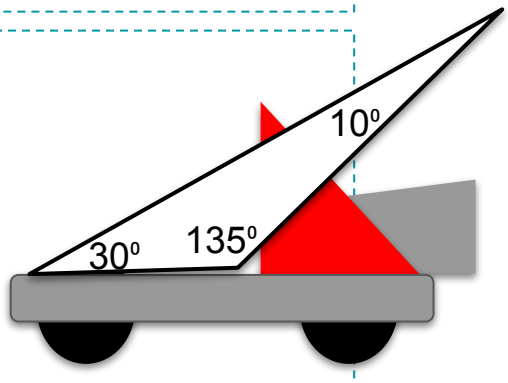
Solution:



Type of obtuse triangle:

3. Correct Value:

Solution:



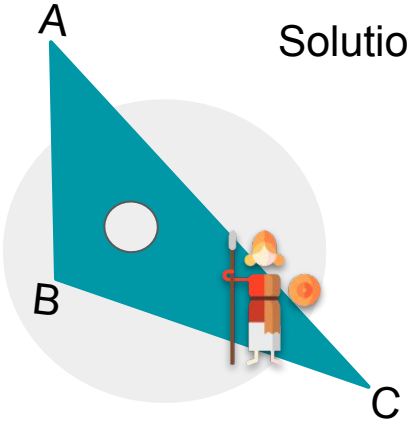
Type of obtuse triangle:

GAME ON!

G4
Advanced

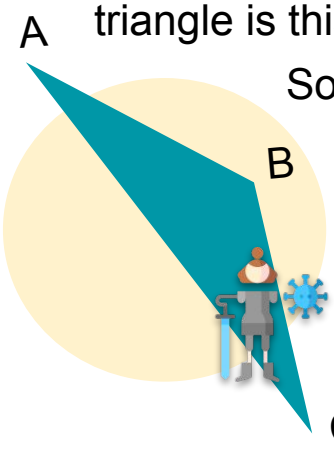
There are premiering a new video game at the gaming section. It's called "The Triangle Chronicles". Let us join the game! Solve the problems below and explain your solution.

1. We are conquering the Obtuse Kingdom. An insider explained that the Point C post is 30^0 and Point A post is 40^0 . We need to surround the area but we need to figure out the angle of Point C to have a clear shot of the inside.. What is the value of Point C? And what kind of obtuse triangle is this?



Solution/Explanation:

2. We're now inside the kingdom! There is another layer of fortress that we need to defeat to win. We need to know the angles of what we will cover. The insider gave us a tip that the Point A and Point C have the same value. We just know that Point B is 130^0. What are the values of Point A and C? And which kind of obtuse triangle is this?



Solution/Explanation:

VIRTUAL REALITY

G4
Advanced

At the very top floor of Happy Toy Palace is a virtual reality hub. A big room where you can create a virtual world and play virtual games. Create your own virtual reality and include obtuse triangles. Be as creative and as imaginative as you can!

CHECK OUT COUNTER

G4 Advanced

We hope you enjoyed your visit at the Happy Toy Palace! You may pay for your purchases here. Encircle the correct answer for each question below.

1. You purchased a game console. Would you like to include a digital copy of the latest game of strategy in the market? The name is based on the angle values of the obtuse triangle that the developer used to create their code. It was said that one angle is 43^0 while the other is 37^0. Based on the type of obtuse angle this is, what is the new game called?

a. Equality Obtuse Wars

b. Scalene Obtuse Wars

c. Isosceles Obtuse Wars

d. Acute Obtuse Wars

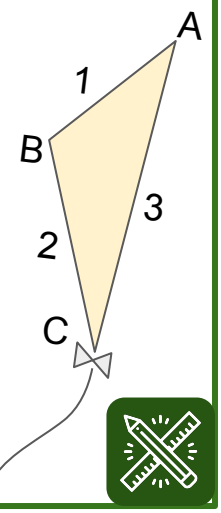
2. Oh, how nice! You bought a Do-It-Yourself Kite Kit: Triangle Edition. Here is how you set it up correctly...Point B is 110^0 while Point C is 40^0. All the sides are based on the value of Point A. Side 1 is equal the value of Point A. Side 2 is double the value of Point A while Side 3 is triple the value of Point A. What are the values of Side 1, Side 2, & Side 3?

a. 10cm, 20cm, 30cm

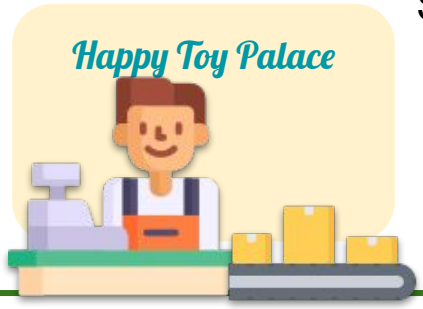
b. 20cm, 40cm, 60cm

c. 30cm,60cm,90cm

d. 5cm, 10cm, 15cm



Solution:



ANSWER GUIDE

Activity 1

Activity 2

1. A
2. B
3. B

Activity 3

1. More than or less than
2. Isosceles Obtuse Triangle
3. Scalene Obtuse Triangle

Activity 4

1. No
2. No
3. Yes
4. Yes
5. Yes

Activity 5

1. 30^{0}
2. 120^{0}
3. 40^{0}
4. 105^{0}
5. 105^{0}
6. 40^{0}

Activity 6

1. A, Scalene Obtuse
2. B, Isosceles Obtuse
3. A, Scalene Obtuse
4. A, Scalene Obtuse
5. B, Scalene Obtuse
6. A, Isosceles Obtuse

ANSWER GUIDE

Activity 7

1. Wrong Value: 40^0
   Correct Value: 30^0

   Solution:
   Correct Angles: $120^0 + 30^0 = 150^0$
   $180^0 - 150^0 = 30^0$

   Type of obtuse triangle:
   Isosceles Obtuse Triangle

2. Wrong Value: 130^0
   Correct Value: 120^0

   Solution:
   Correct Angles: $35^0+25^0=60^0$
   $180^0-60^0=120^0$

   Type of obtuse triangle:
   Scalene Obtuse Triangle

3. Wrong Value: 10^0
   Correct Value = 15^0

   Solution:
   Correct Angles: $135^0+30^0=165^0$
   $180^0-165^0=15^0$

   Type of obtuse triangle:
   Scalene Obtuse Triangle

Activity 8

1. Point A + Point C = Sum of two angles
   $40^0+30^0 = 70^0$
   $180^0-70= 110^0$

   Value of Point C = 170^0
   Scalene Obtuse Triangle

2. Point B = 130^0
   $180^0-130=50^0$

   50 divided by 2 sides = 25^0

   Point A and C are each 25^0
   Isosceles Obtuse Triangle

Activity 9

Answers may vary.

Activity 10

1. b. Scalene Obtuse Wars
2. c. 30cm,60cm,90cm

   Solution:
   Point B + Point C = Sum of two angles
   $110^0+40^0=150^0$

   $180^0-150^0=30^0$
   Point A = 30^0

   Side 1 30cm
   Side 2 30x2 = 60cm
   Side 3 30x3 = 90cm

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