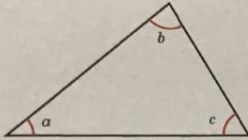
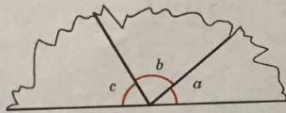


# Angles in a triangle

1 Here is a triangle.



a) The three vertices are torn off the triangle and arranged on a straight line.



What is the sum of the three angles?

$180^\circ$

How do you know?

because half a turn is  $180^\circ$

b) Now measure the sizes of angles  $a$ ,  $b$  and  $c$  in the triangle.

$a = 48^\circ$

$b = 80^\circ$

$c = 60^\circ$

c) What is the total of angles  $a$ ,  $b$  and  $c$ ?

$186^\circ$

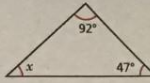
d) Complete the sentence.

Angles in a triangle equal  $180^\circ$

2 Work out the sizes of the unknown angles.

Give reasons for your answers.

a)

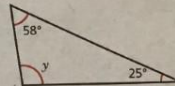


$x = 41$  because it adds up to  $180^\circ$

$$\begin{array}{r} 42 \\ + 47 \\ \hline 139 \end{array}$$

$$\begin{array}{r} 180 \\ - 139 \\ \hline 41 \end{array}$$

b)

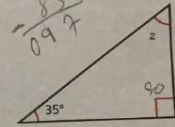


$y = 97$  because it adds up to  $180^\circ$

$$\begin{array}{r} 58 \\ + 25 \\ \hline 83 \end{array}$$

$$\begin{array}{r} 180 \\ - 83 \\ \hline 97 \end{array}$$

c)

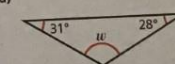


$z = 55$  because it adds up to  $180^\circ$

$$\begin{array}{r} 90 \\ + 35 \\ \hline 125 \end{array}$$

$$\begin{array}{r} 180 \\ - 125 \\ \hline 55 \end{array}$$

d)



$w = 117$  because it adds up to  $180^\circ$

$$\begin{array}{r} 31 \\ + 28 \\ \hline 69 \end{array}$$

$$\begin{array}{r} 180 \\ - 69 \\ \hline 111 \end{array}$$

3 Work out the unknown angles.

a)  $q = 68.4$

b)  $r = 36.3$

c)  $s = 139.0$

d)  $t = 60.7$

Discuss your reasons with a partner.

$180.0 - 111.6 = 68.4$

$180.0 - 143.7 = 36.3$

$180.0 - 41.0 = 139.0$

$180.0 - 119.3 = 60.7$

4 a) Two angles in a triangle are  $42^\circ$  and  $57^\circ$ .  
What is the size of the third angle?

$180 - 99 = 81$

$81^\circ$

b) Two of the angles in a triangle are  $12^\circ$ .  
What is the size of the third angle?

$160^\circ$

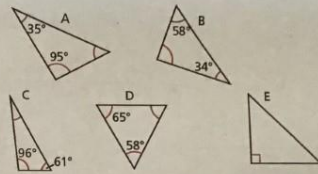
c) One of the angles in a triangle is  $38^\circ$ . Another angle is twice the size of the first angle.  
What is the size of the third angle?

$76 + 38 = 114$

$180 - 114 = 66$

$66^\circ$

5 Sort the triangles into the table.

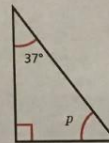


0 acute angles	1 acute angle	2 acute angles	3 acute angles
		A, B, C, E	D

Are any of the columns empty? Why?

yes because these are acute triangles all triangles have acute angles

6



$p = 143^\circ$  because angles in a triangle sum to  $180^\circ$  and  $180 - 37 = 143$



Do you agree with Ron? no

Explain your answer.

he forgot to add on the  $90^\circ$  angle. to  $37^\circ$  and then take from  $180^\circ$





# Journey to the centre of the Earth

## Introduction

These instructions will help you to survive when going on a journey to the centre of the Earth.

## What you will need and why

1. To get to the centre of the Earth you will need some sort of hole in the ground like a volcano (extinct preferably)
2. To get down that hole in the ground you will need some sort of climbing equipment
3. A hard hat so any low ceilings or debris don't damage your head in any serious way,
4. Take a torch so you can see down the long, dark pathways and tunnels,
5. Take as much food and water as you can carry in a backpack if you need any refills there are underground water pools that have suitable drinking water
6. Make sure you have a waterproof sleeping bag so you don't wet or dirty while you sleep.
7. Have water proof clothes so you don't get wet and make sure you wear plenty of worm layers.
8. Climbing shoes or suitable walking shoes for rocky surfaces.
9. Take a camping stove and a pot for cooking any raw food and take a metal mug for any coffee or tea the you may take.
10. Take a compass and a map so you can get around and so you don't get lost.
11. I would also take someone with you who has experience of climbing and caving.



## **Final note of warning**

Be careful for any holes or canyons and falling debris, be careful of rockslides and magma. Always stay with your guide!!

## **Egg mayo sandwich recipe**

### **What you will need**

1. 2 medium free range eggs
2. Mayonnaise (enough to your liking)
3. 2 slices of bread (which ever you like)
4. Saucepan
5. Enough water to cover the eggs
6. Fork
7. Knife
8. Bowl
9. Optional: cress, watercress and butter

### **Method**

1. First put the eggs into the saucepan and cover them with water.
2. Next turn on the stove and bring to the boil.
3. Then boil the eggs for 10 minutes.
4. Now turn off the stove and drain the water off.
5. After that cover the eggs with cold water to cool them down
6. Once cool take off the shell.
7. Place the eggs into the bowl with some mayonnaise
8. Using the fork mash the eggs up with the mayonnaise
9. Scoop the egg mayo mix onto the bread.
10. Sprinkle on some cress if required and put the other piece of bread on top
11. Finally cut into manageable pieces (ie in halves or quarters) and enjoy.