

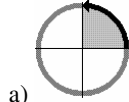
## Triangle Geometry

Draw any quadrilateral (four-sided figure). It doesn't need to be a square, or even a rectangle, as long as the sides are straight.

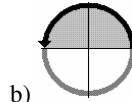
Mark the corners with arrows, as in the slideshow. This is to make sure you join up the right corners. (vertices).

Join up the corners, tip to tip.

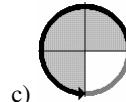
1. The four angles together make up



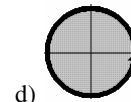
90°



180°



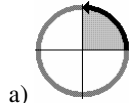
270°



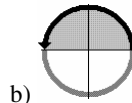
360°

Do the same exercise, using triangles instead of quadrilaterals. Try any triangle: acute or obtuse, or just plain weird – as long as it has three sides that are straight!

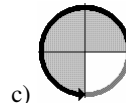
2. When joined tip to tip, the three angles together make up



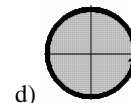
90°



180°



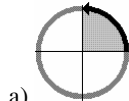
270°



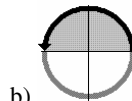
360°

Draw a right angle triangle. Just a right angle to start with, tracing around a CD case or any other such object to get a good right angle, and then a third side wherever you like. Just cut out the two angles that are not right angles, and join them tip to tip.

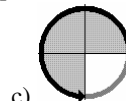
3. When joined tip to tip, the two angles together make up



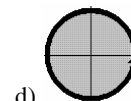
90°



180°



270°



360°

4. The interior (inside) angles of a triangle add up to:

a) 90°

b) 180°

c) 270°

d) 360°

5. The non-right angles of a right triangle add up to:

a) 90°

b) 180°

c) 270°

d) 360°

6. The interior (inside) angles of a quadrilateral add up to:

a) 90°

b) 180°

c) 270°

d) 360°

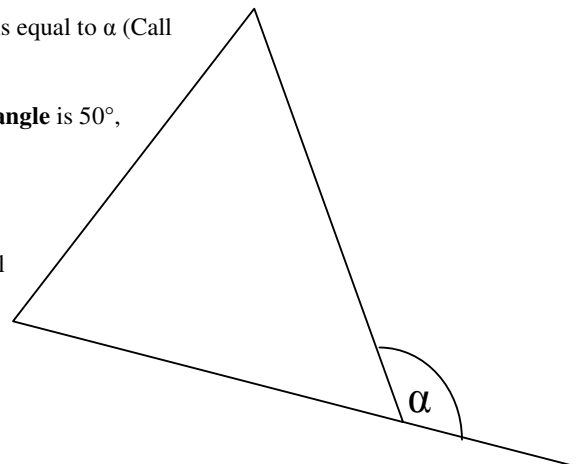
7. On the triangle on the right, label the two angles whose sum is equal to  $\alpha$  (Call them  $x$  and  $y$ ).

8. In the triangle on the right, if  $\alpha = 120^\circ$ , and the **top interior angle** is  $50^\circ$ ,

a) what is the interior angle **at the same vertex** as  $\alpha$ ?

b) what is the size of the third angle?

c) Draw an exterior angle for the bottom left vertex, and label it  $\beta$ .



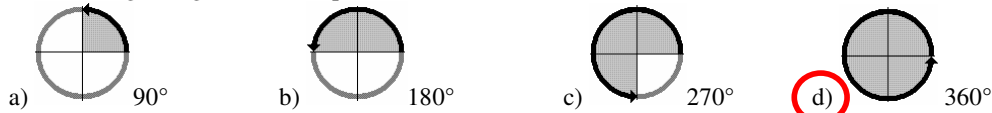
## Triangle Geometry - Answers

Draw any quadrilateral (four-sided figure). It doesn't need to be a square, or even a rectangle, as long as the sides are straight.

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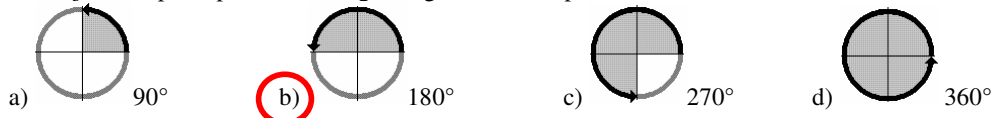
Join up the corners, tip to tip.

1. The four angles together make up



Do the same exercise, using triangles instead of quadrilaterals. Try any triangle: acute or obtuse, or just plain weird – as long as it has three sides that are straight!

2. When joined tip to tip, the three angles together make up



Draw a right angle triangle. Just a right angle to start with, tracing around a CD case or any other such object to get a good right angle, and then a third side wherever you like. Just cut out the two angles that are not right angles, and join them tip to tip.

3. When joined tip to tip, the two angles together make up



4. The interior (inside) angles of a triangle add up to:

a)  $90^\circ$       b)  $180^\circ$       c)  $270^\circ$       d)  $360^\circ$

5. The non-right angles of a right triangle add up to:

a)  $90^\circ$       b)  $180^\circ$       c)  $270^\circ$       d)  $360^\circ$

6. The interior (inside) angles of a quadrilateral add up to:

a)  $90^\circ$       b)  $180^\circ$       c)  $270^\circ$       d)  $360^\circ$

7. On the triangle on the right, label the two angles whose sum is equal to  $\alpha$  (Call them  $x$  and  $y$ ).

8. In the triangle on the right, if  $\alpha = 120^\circ$ , and the **top interior angle** is  $50^\circ$ ,

a) what is the interior angle **at the same vertex** as  $\alpha$ ?  $60^\circ$

b) what is the size of the third angle?  $70^\circ$

c) Draw an exterior angle for the bottom left vertex, and label it  $\beta$ .

