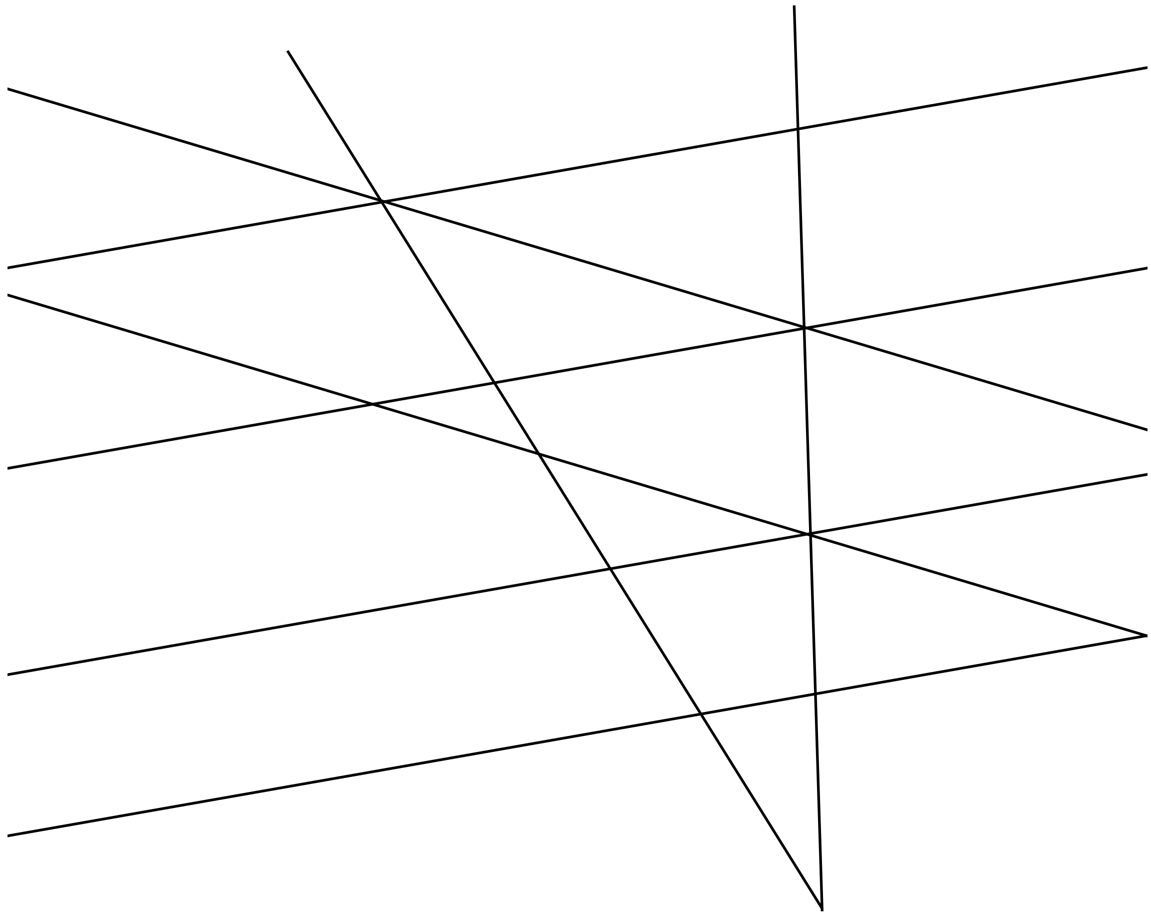
## Angles are related to each other:

Measure all the angles below. Look for patterns and explain what you find.

Colour angles any that are the same with the same colour. Mark sets of angles that add to 180o with the symbol *



Mark any sets of parallel lines that you can see with the symbol >

Can you find any patterns when a line crosses a set of parallel lines? Explain:

Can you find any patterns in the angles formed inside triangles? Explain:

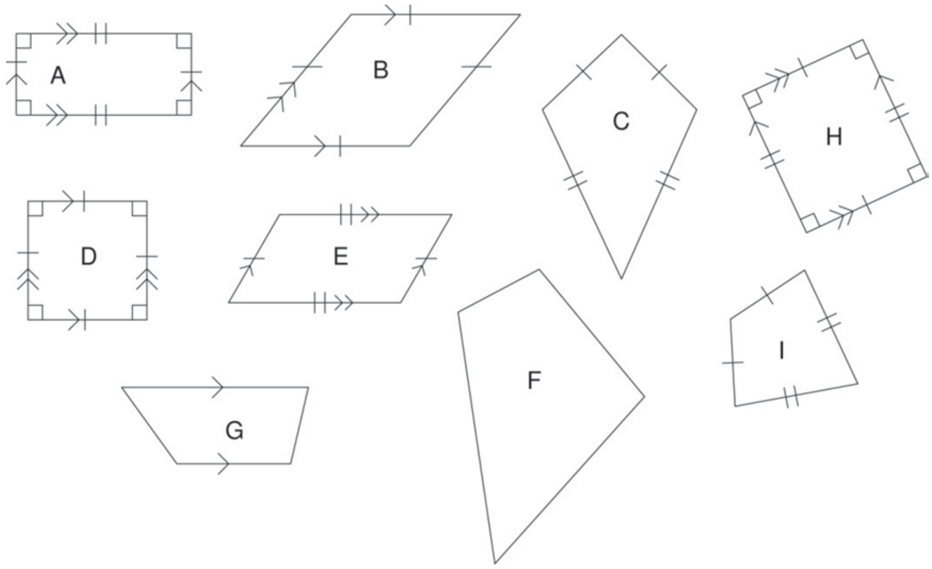
Can you find any patterns in the angles formed inside quadrilaterals (4 sided shapes)? Explain:

# K2. Revising subfamilies of quadrilaterals and triangles

TR p143

Families of shapes have subfamilies. Compare the family of shapes shown below. Write the letters of each shape that match the definition.

**Quadrilateral:** All closed shapes that have four straight sides.




**Trapezium:** Quadrilaterals that have at least one set of parallel sides.

**Diamond:** Quadrilaterals that have two sets of equal sides, which are adjacent.

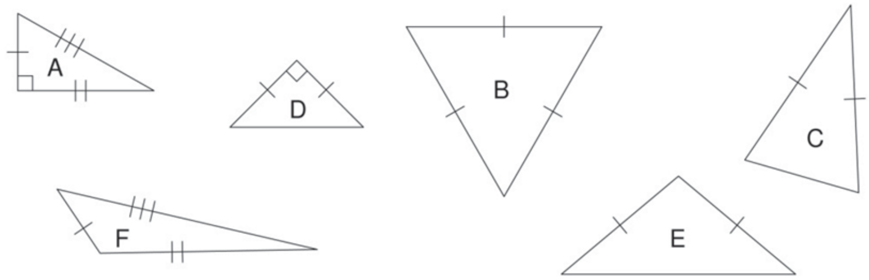
**Parallelogram:** Quadrilaterals that have two sets of parallel sides and two sets of equal sides.

**Rectangle:** Parallelograms for which the angles are all $90^o$.

**Rhombus:** Parallelograms for which all the sides are equal.

**Square:** All sides equal. Two sets of parallel sides. All angles are $90^o$.

**Triangles:** All closed shapes that have three straight sides.




**Equilateral triangles:** Triangles that have three equal sides, and three equal angles.

**Isosceles triangles:** Triangles that have two equal sides and two equal angles.

**Scalene triangles:** Triangles that have three different sides and three different angles.

**Right angled triangles:** Triangles that have a right angle.

## Wednesday: Connecting lesson

This lesson allows your child to think about the angles in triangles, and work out that when we add them up it always makes 180$^{o}$, or a straight angle.

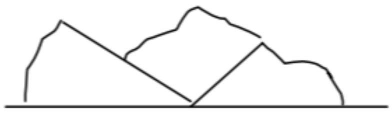
**You will need:**

- A cut out triangle or a few of them
- A ruler to act as a straight edge
- A protractor, or the one we made on Monday.

Here is a diagram to show how to tear up a triangle into 3 parts. Once you have done this, you will have 3 angles that you can place together along a line. The worksheet will confirm this finding. The last question is necessary to do.

1. Tear the triangle

2. Place the three angles together:



3. The angles form a straight line, so they must add up to give 180$^{o}$.

Try doing this for quadrilaterals and you will find that each quadrilateral makes a complete rotation. That means that the angles add to make 360$^{o}$.

**Number task for 10-15 minutes:** ***Multiplication grid below***

| X | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |

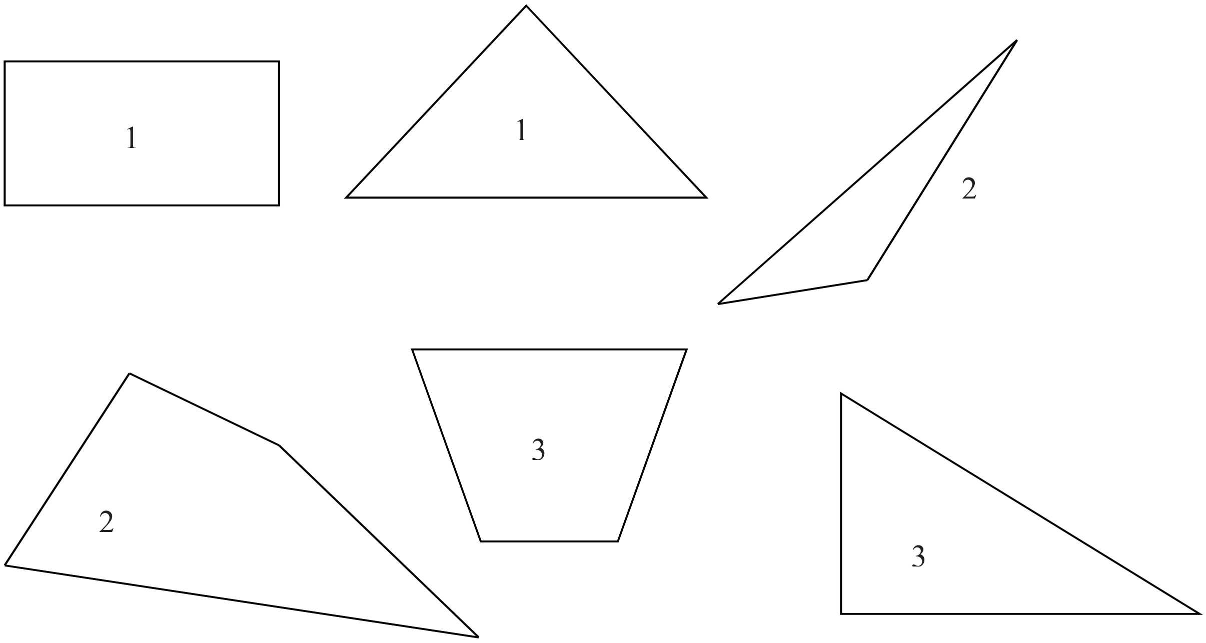
Record your time here for the 49 questions:
Mark your answers using a calculator or with an adult. Circle any that are wrong.

# K4. Internal angles of a quadrilaterals and triangles

TR p144

Measure each of the angles in the following quadrilaterals and triangles and record your results in the table below. Add up the internal angles for each and see if you can find a pattern.




| | Angle 1 (°) | Angle 2 (°) | Angle 3 (°) | Angle 4 (°) | Sum of angles (°) |
|---|---|---|---|---|---|
| Quadrilateral 1 | | | | | |
| Quadrilateral 2 | | | | | |
| Quadrilateral 3 | | | | | |
| Triangle 1 | | | | | |
| Triangle 2 | | | | | |
| Triangle 3 | | | | | |

**Backwards Question:**
Draw one line inside each quadrilateral above to turn it into two triangles. Measure the angles for each triangle. How do these compare to the quadrilaterals?

## Interleaved practice

Number:

1. Year 7 is selling cupcakes to raise money for camp. Each student is asked to bring 6 cupcakes for the sale. Complete the table to show how many cakes they would have to sell:

| students | 1 | 2 | 3 | 4 | 5 | 8 | 15 | 23 |
|---|---|---|---|---|---|---|---|---|
| Cakes | 6 | 12 | 18 | | | | | |

2. 478 + 253 + _____ = 1000

3. Write down all of the factors of 48.

4. If you are counting in hundredths, what number comes after 509.99?

5. Which of these two bikes represent the best value for money? How do you know?


25% off

**$340.00**


half price

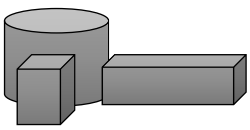
**$470.00**

Measurement/Geometry:

6. Use a ruler or tape measure to find the length of 5 objects that are longer than 60cm and shorter than 2 metres. Write the name of the objects and their length in both centimetres and metres.

7. Your favourite television show runs for 100 minutes? If it finished at 16:30, what time did it start?

8. Draw what this shape would look like from above and from the other side.



Chance/Data:

9. This table shows data collected when students were asked to choose their favourite colour. Fill in the missing data and write down three facts that you can learn from the table. What is one thing that the table **does not** tell you?

| | Red | Blue | Purple | Yellow |
|---|---|---|---|---|
| Girls | 6 | 5 | 3 | |
| Boys | 4 | 7 | | 1 |
| **Total** | | | **8** | **6** |

# K9. Predicting the shape from the net

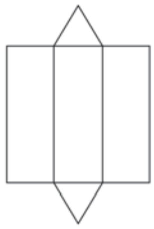
TR p145

It is often useful to be able to tell which 3D shape goes with which net. You can tell which ones match by their properties such as the number and shape of their faces, and their angles.

Look at the pictures of the 3D shapes below. Answer the questions about each, then write which net would fold to give that shape.

**Cube:**

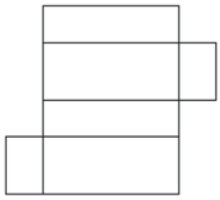
1. How many faces does it have?
2. What shape are the faces?
3. What is special about the angles?



A

**Rectangular Prism:**

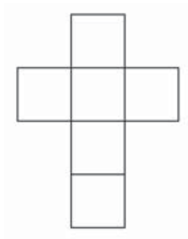
1. How many faces does it have?
2. What shape are the faces?
3. What is special about the angles?



B

**Triangular Prism:**

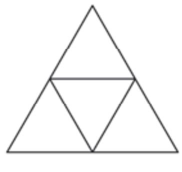
1. How many faces does it have?
2. What shape are the faces?
3. What observations can you make about the angles?



C

**Triangular Pyramid:**

1. How many faces does it have?
2. What shape are the faces?
3. What observations can you make about the angles?



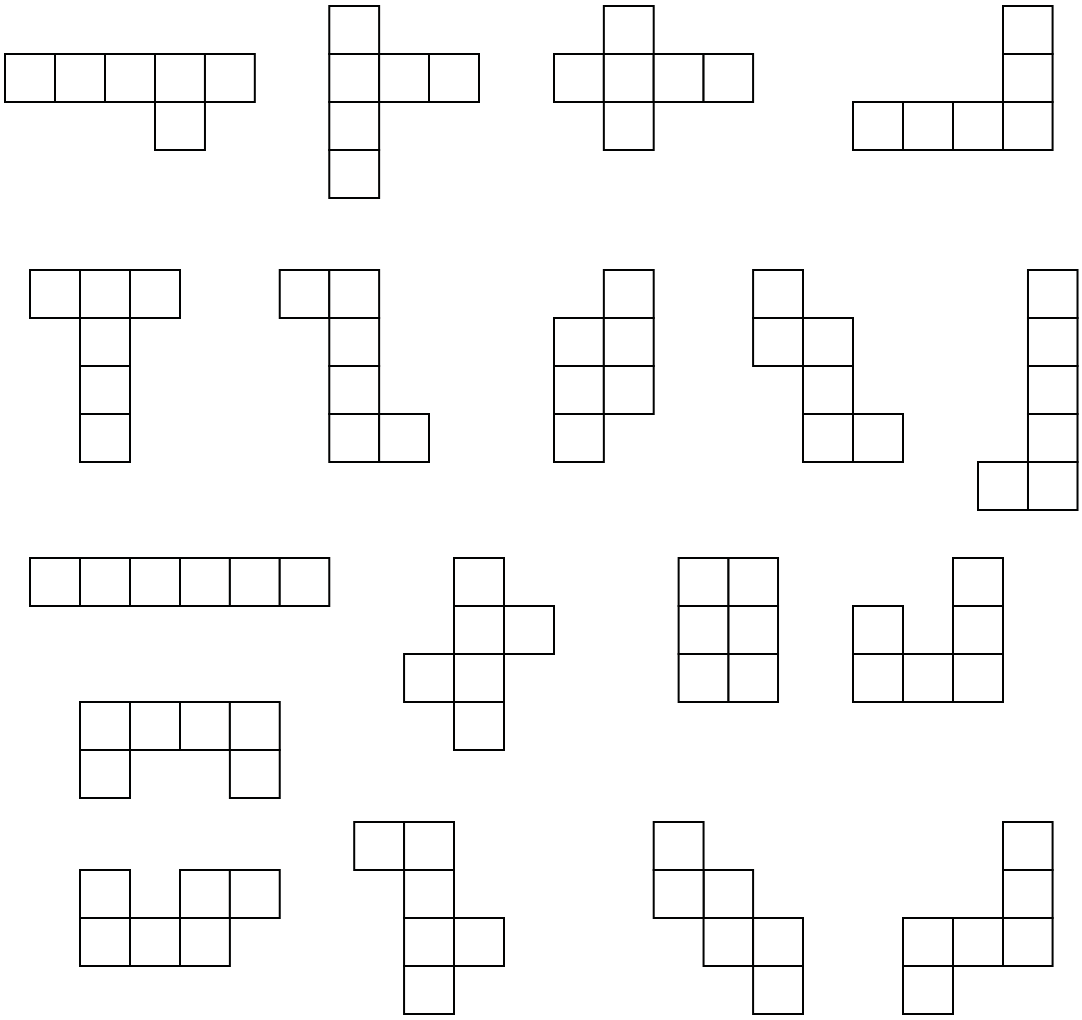
D

**BACKWARDS QUESTION:**

What shape other than a cube would have 6 faces with at least 5 congruent?

# Identifying cube nets

Examine the diagrams below and circle the nets that would fold to give a cube.



**BACKWARDS QUESTION:**

Draw three nets that would fold to give the same triangular pyramid: