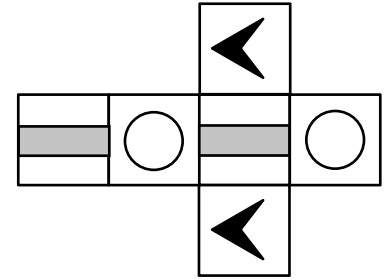




Nets and Cubes

In **Nets and Cubes** questions, you are shown a 2D net and asked to work out what it would look like when it is folded up into a cube.

There are **three rules** we can use to rule out incorrect cubes. These are explained using the net on the right.



1

Duds

2

Opposites

3

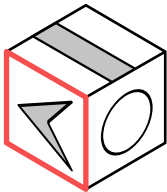
Orientation

1

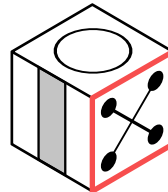
Duds

- A **dud cube** is a cube that has features that are **not** shown on the net. They may show a **shape** or a **colour** that is not on the net.
- Always start by looking for dud cubes - they're the easiest to spot!

Dud cubes



The arrow shape is the **wrong colour**.

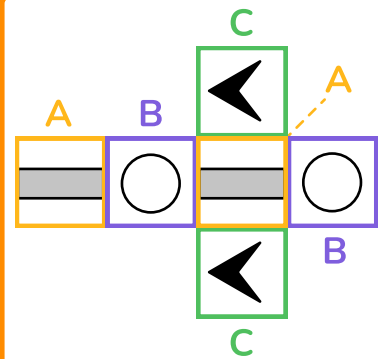


The X shape **does not exist** on the net.

2

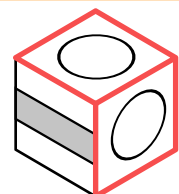
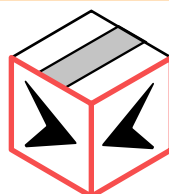
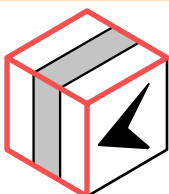
Opposites

- Next, look for cubes that show two faces **next to** each other that are **opposite** each other on the net.
- The net shows **pairs of opposite faces** containing the same shapes and letters.



Remember! We can never see two opposite faces **at the same time** when the net is **folded** into a cube.

Breaking the opposites rule

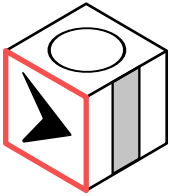


3

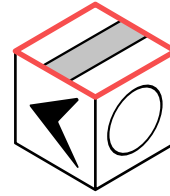
Orientation

- Finally, we need to look for cubes that have shapes that are **pointed in a different direction** to how they are on the net.

Breaking the orientation rule



The triangle should not point towards the 'B' shape.



The 'lever' should not point towards the circle!



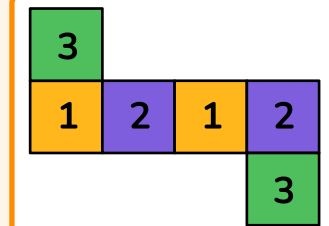
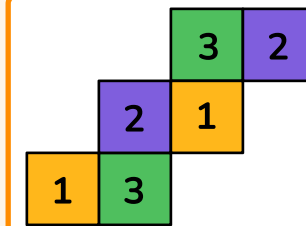
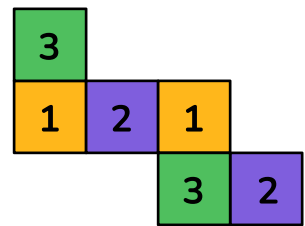
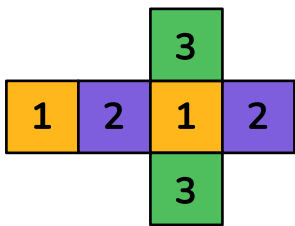
Remember! We have to think about how the shapes will be orientated when the cube is **folded**, not just how they are orientated on the net!



Top Tips



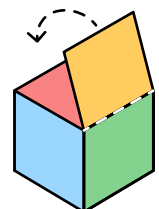
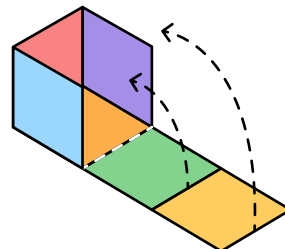
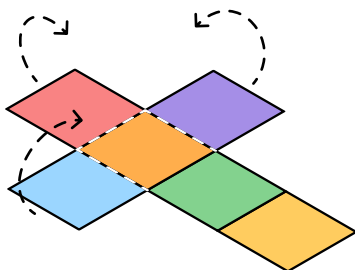
There are three pairs of opposite squares on every net. The opposite faces in the nets below are indicated by the **same colours and numbers!**



Look for **identifying features** on a shape, such as points or arrowheads, to figure out which faces it's pointing towards.



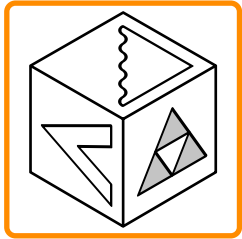
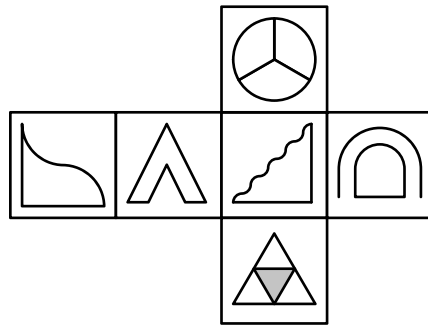
Sometimes it can help to visualise the folding process...



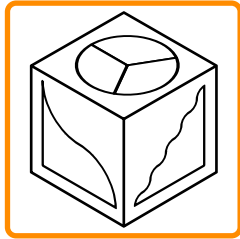


Example Question

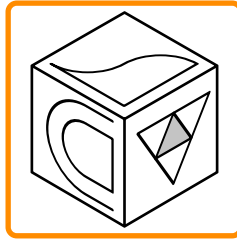
Which of the cubes below could be made from this net?



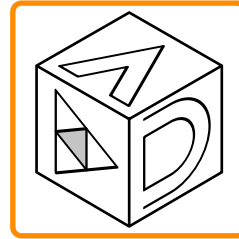
A



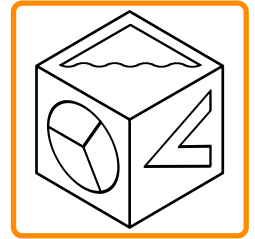
B



C



D



E

1

Start by looking for **dud cubes** that show different shapes or shapes that don't exist at all.

X

We can rule out...

- **A** because the colours of the triangle are wrong - only the middle triangle should be grey!

2

Next, the **opposites rule** - are there any faces that should **not** be next to each other?

X

We can rule out...

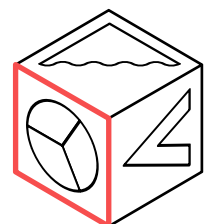
- **B** and **D** - the left and right faces on **B** and the top and right-hand faces on **D** are **opposite** each other on the net!

3

Finally, let's apply the **orientation rule** - are any of the shapes pointing the wrong way?

✓

E is a **red herring!** It looks like it could be the correct cube, but if we look closely at the **circular shape** on the **left-hand face**, we can see that it is orientated incorrectly!



C is the correct answer! It is the only cube that can be made from the net.