

Maths Home Learning Task 2

Year 7

Nets

Name _____

Tutor Group _____

Teacher _____

Given out: Monday 25 November Hand in: Monday 2 December

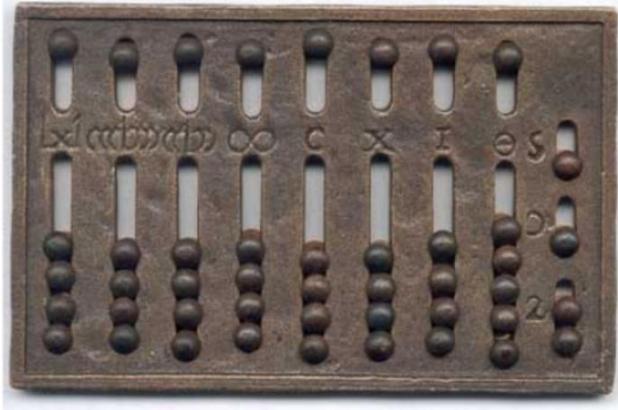
Parent/Carer Comment

Staff Comment

ATL

Target

Reading Task



Abacuses - Roman Mathematics

According to legend, two brothers who were the sons of the god of war founded Rome in 753 BC. By 146 BC, when the Roman soldiers crushed Carthage, Rome became the greatest power in the Mediterranean. The Romans were known as mighty conquerors and had control of southern Europe, Gaul, Britain, North Africa, and much of Asia. Roman merchants had to develop accounting and measuring systems that assisted them in keeping track of their trades as they travelled across the vast empire. Since the Romans also controlled the Greek colonies, they absorbed a great deal about art, literature, and geometry from them. However, the Romans didn't copy everything from the Greeks: they devised their own simpler numerical system, and they also made notable contributions to our modern calendar and architecture.

The Roman number system was based on seven symbols: I for 1; V for 5; X for 10; L for 50; C for 100; D for 500; and M for 1,000. Like the Greeks, the Romans had little need for large numbers. The Romans still did not have a zero in their system, but the position of the number determined its value. If the number follows a larger number, the two numbers are added. For example, VI equals 6. When a smaller number precedes a larger number, the smaller number is subtracted, so IV equals 4. Today Roman numerals are still sometimes used for dates, or to label volumes in books, or on the faces of clocks, but calculating with Roman numerals was difficult. Multiplication or division was practically impossible, so Roman merchants assigned the task of calculations to slaves, who used a device called an abacus for the task.

The Roman abacus was a table with columns drawn on its surface. Each column represented a power of 10. A column on the right was one; the column to the left was 10; the next column to the left was 100, and so on. There were also two columns on the far right that were used for fractional values. Counters or pebbles, called *calculi*, were placed in the columns to represent different numbers, and were moved from column to column to perform calculations. Calculating anything with an abacus was a complicated process and required a great deal of training. The calculi were made of different materials ranging from bronze to gold depending on the wealth of the merchant.

The ability to calculate and keep track of numbers was important in the Roman Empire because the Romans controlled a huge trading network. Roman merchants developed an advanced system of weights and measures to use in their trades. They also developed a banking system, and traders who needed money could get loans to start businesses. Some lenders worked for the Empire, while others were independent. The first coin-making factory, or mint, started in 290 BC. Coins were minted from gold, silver, bronze, or copper and had pictures of the emperors on them. If an emperor died or became unpopular, the coins with his picture on them were scratched or discarded. The Romans sometimes minted special coins in honor of victories or special dates.

Q1. Nets Task Sheet:

Use the six templates enclosed in this booklet to construct the six 3D objects. Label each shape clearly.

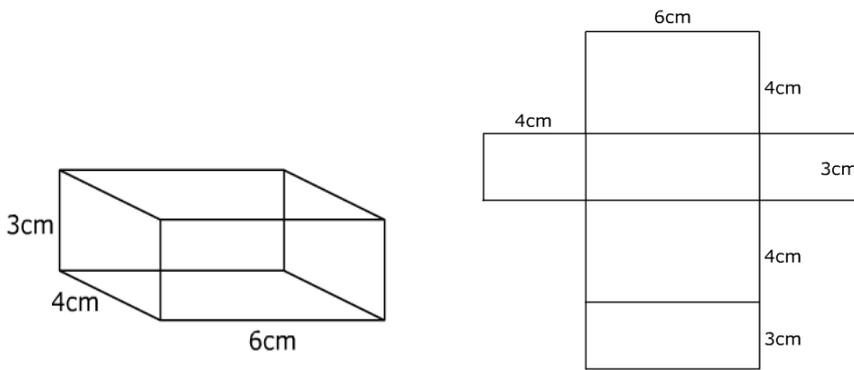
Use the objects you have built to complete the following table.

Shape	Vertices (corners)	Edges	Faces (sides)
Cube			
Pyramid			
Tetrahedron			
Octahedron			
Pentagonal prism			
Cylinder			

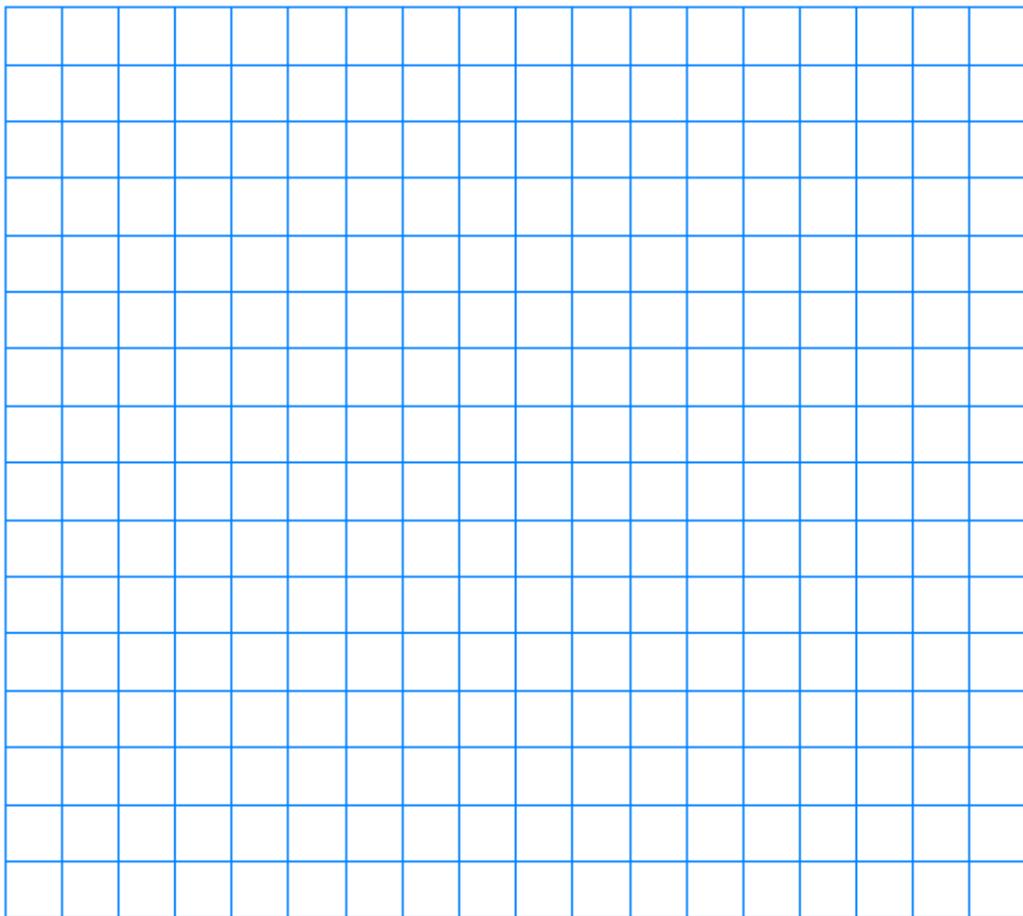
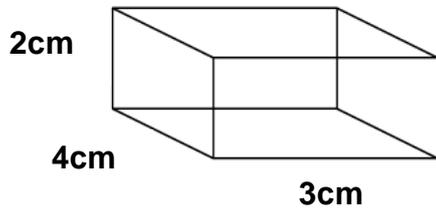
Note: Please keep the objects you have made at home. You only need to hand in this booklet. It would be nice to see pictures of your models if possible.

Q2. Nets of Cuboids

Example: the net of the cuboid below is illustrated here.

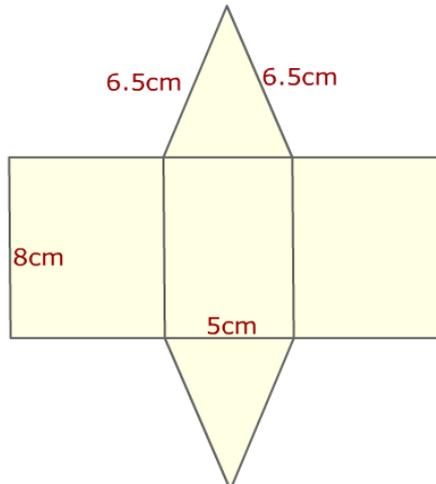
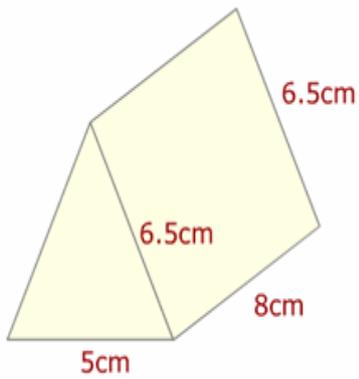


Use this example to draw the net of the following cuboid:

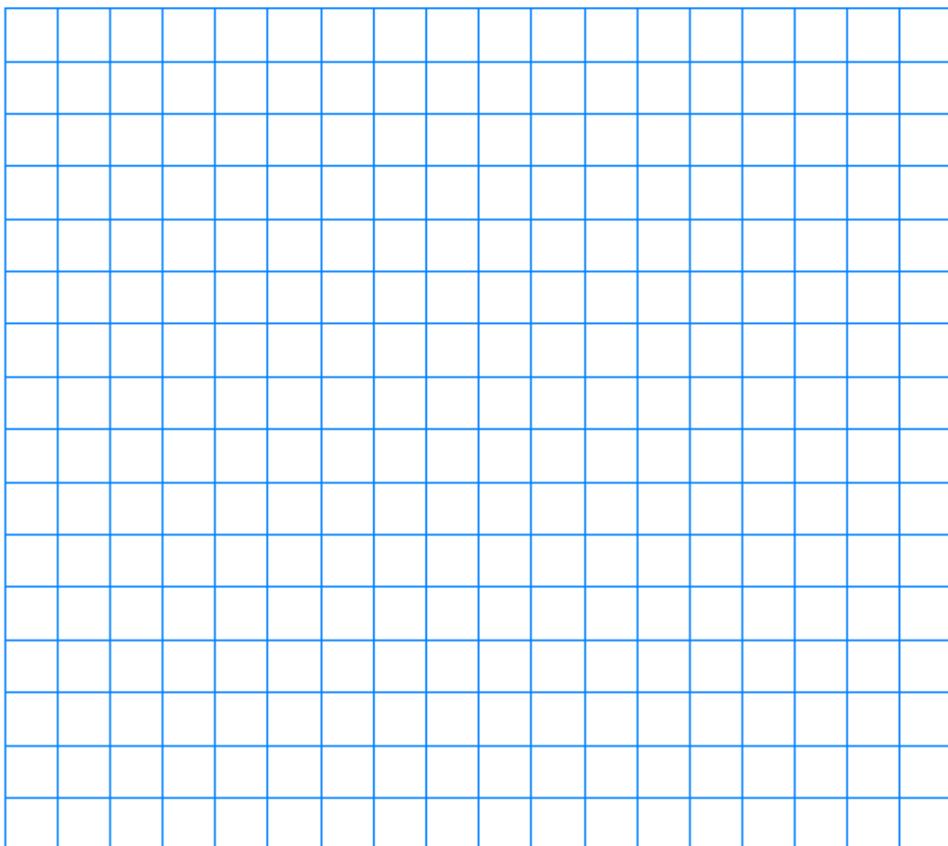
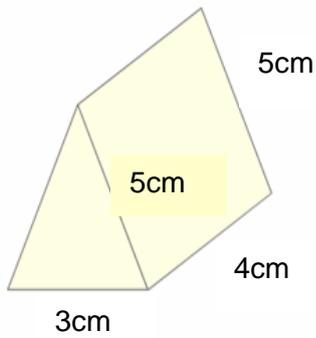


Q3. Nets of Cuboids

Example: the net of the triangular prism below is illustrated here.

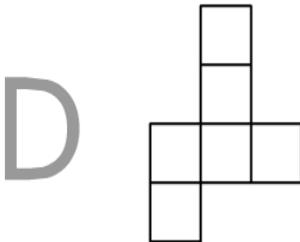
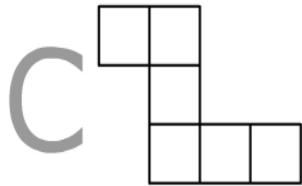
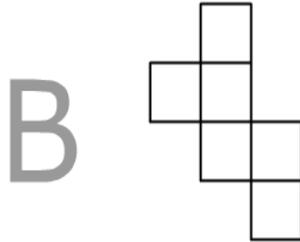
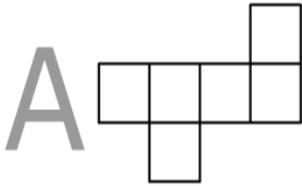


Use this example to draw the net of the following triangular prism:

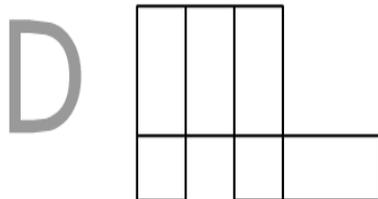
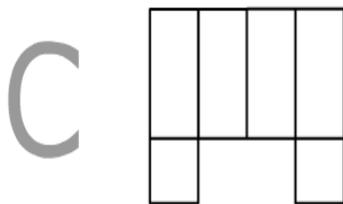
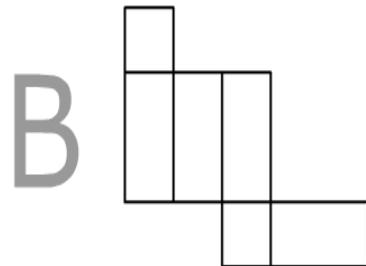
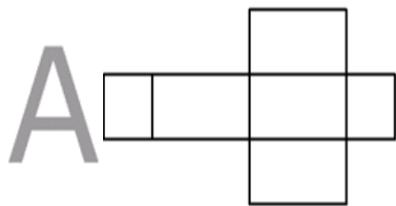


Q4. Please circle the correct answers.

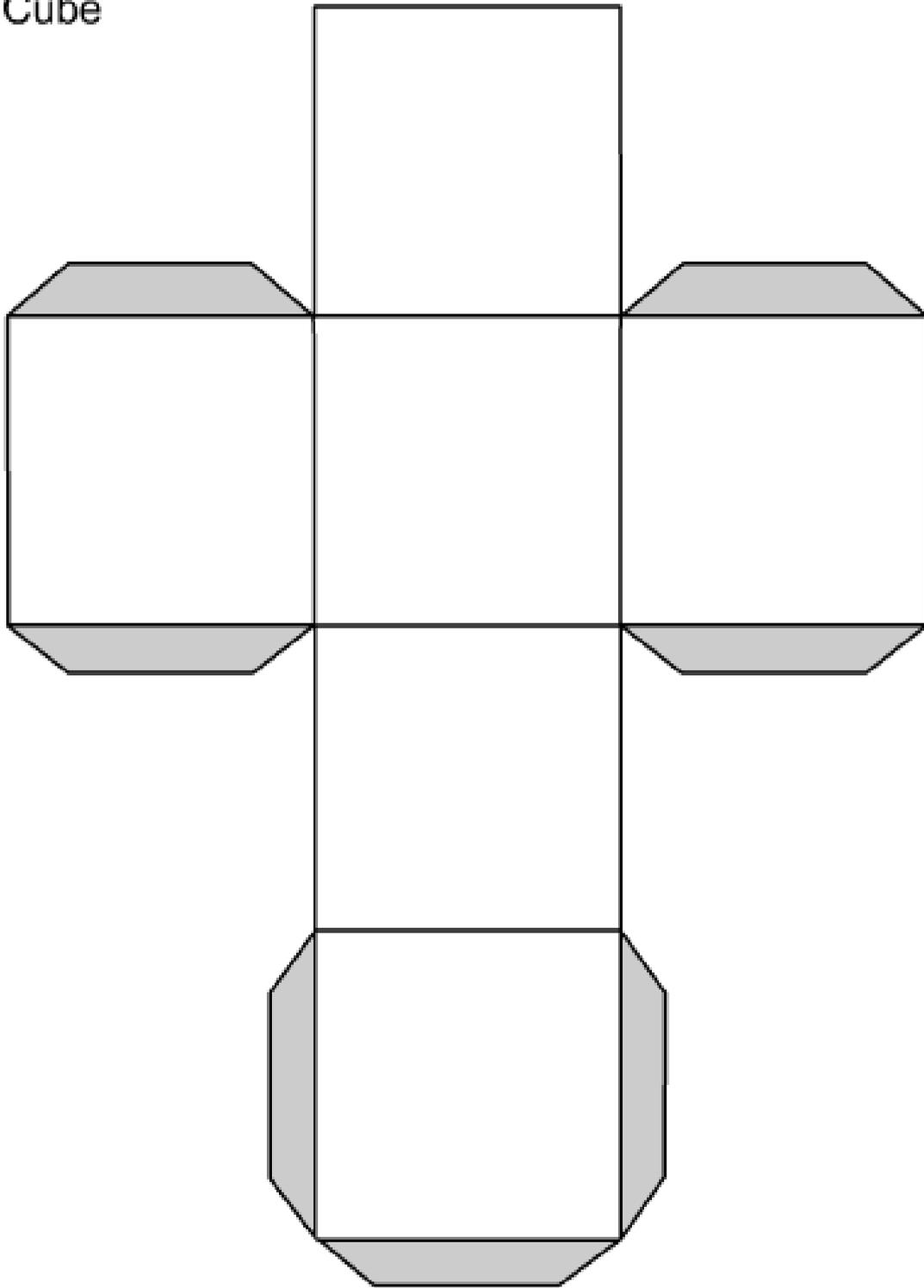
a) Which of these nets will fold to make a cube?



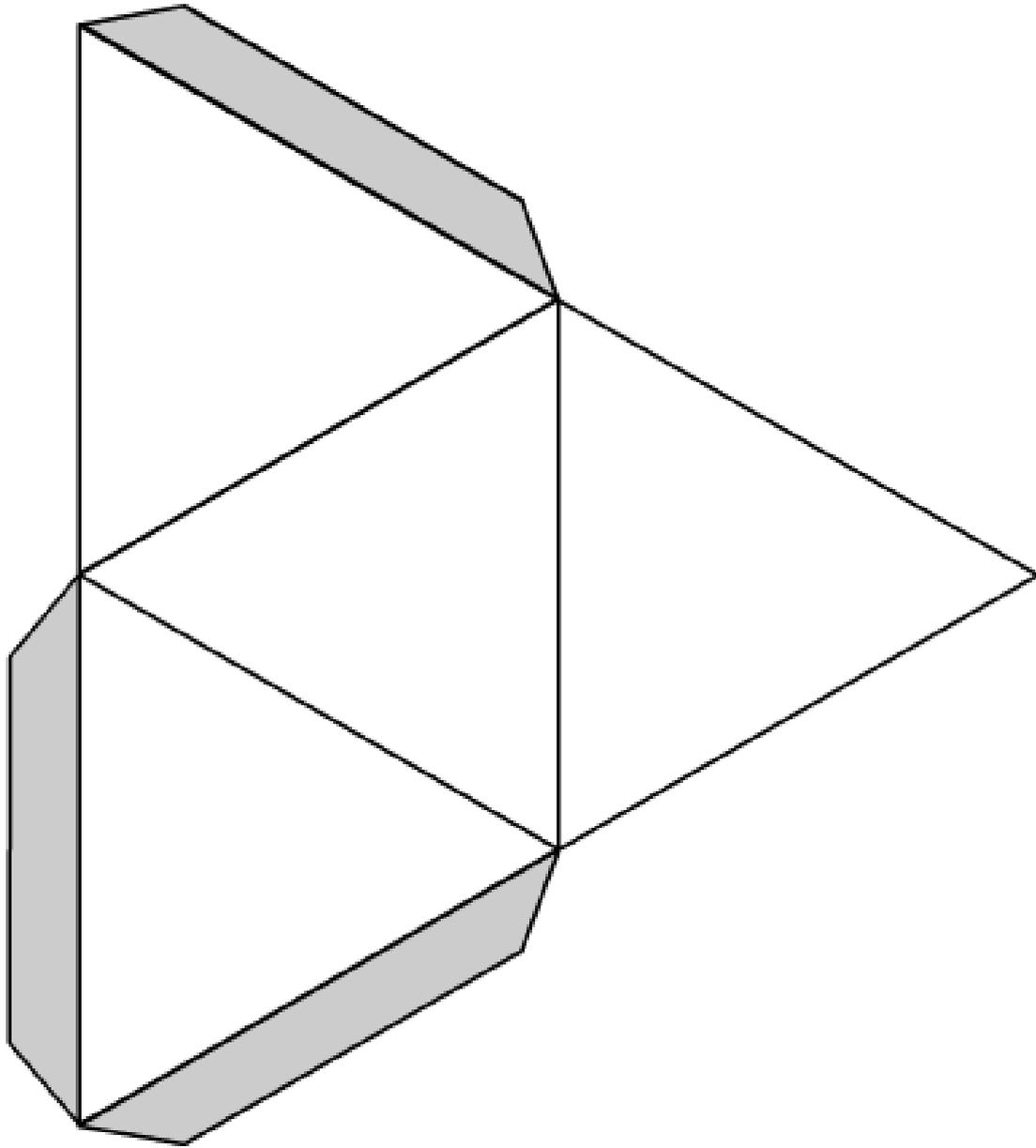
b) Which of these nets will fold to make a cuboid?



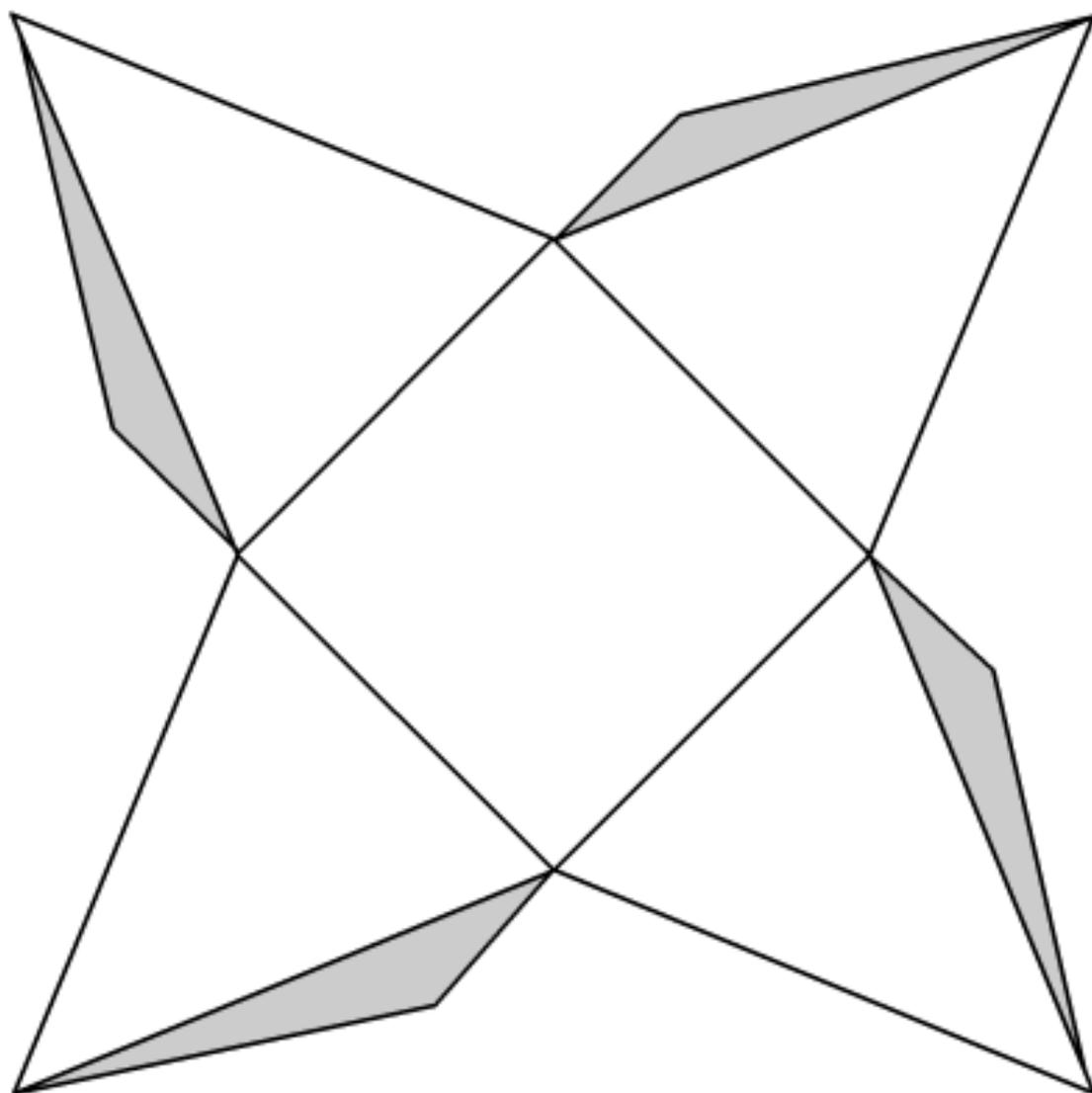
Cube



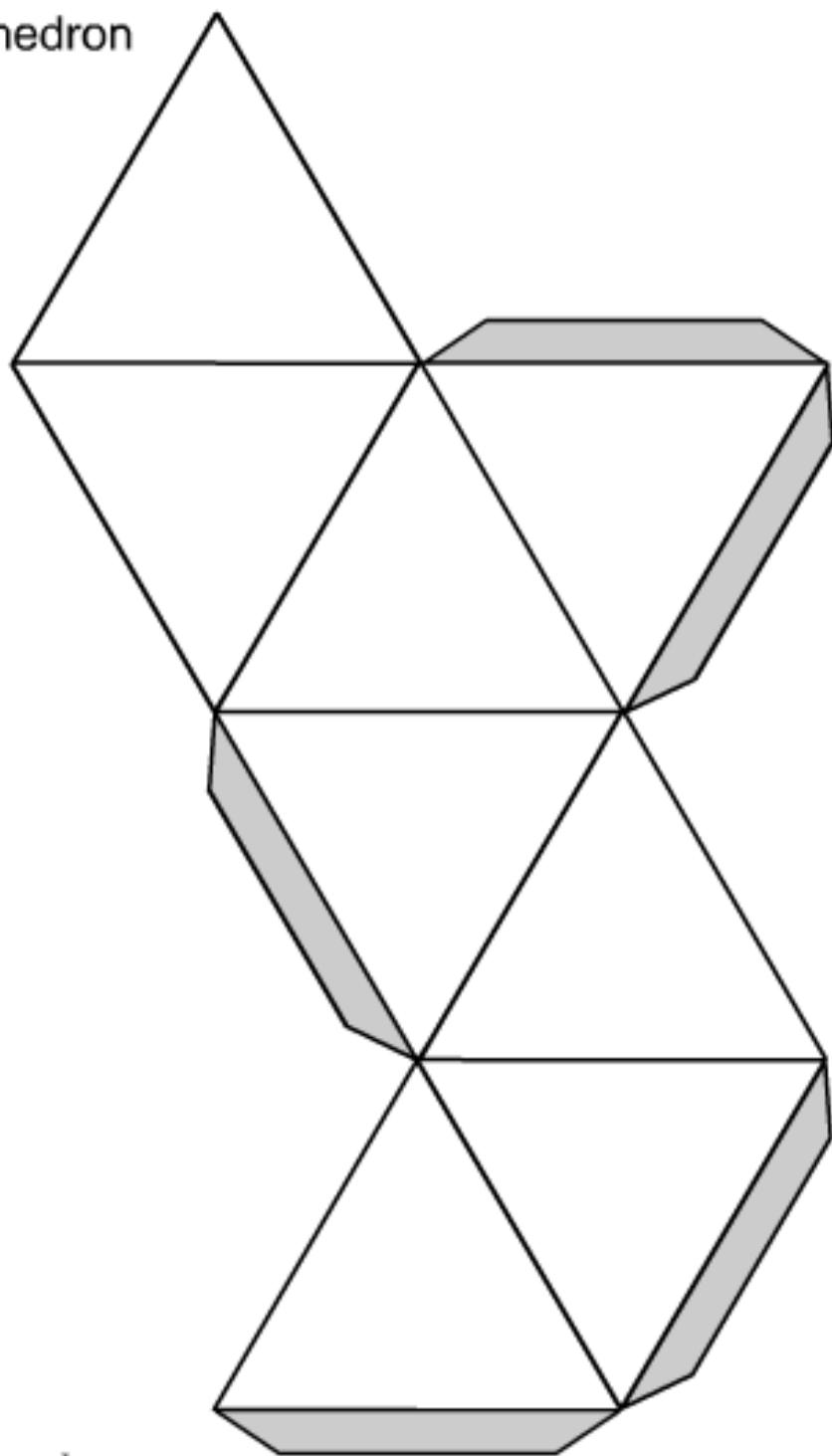
Tetrahedron



Pyramid

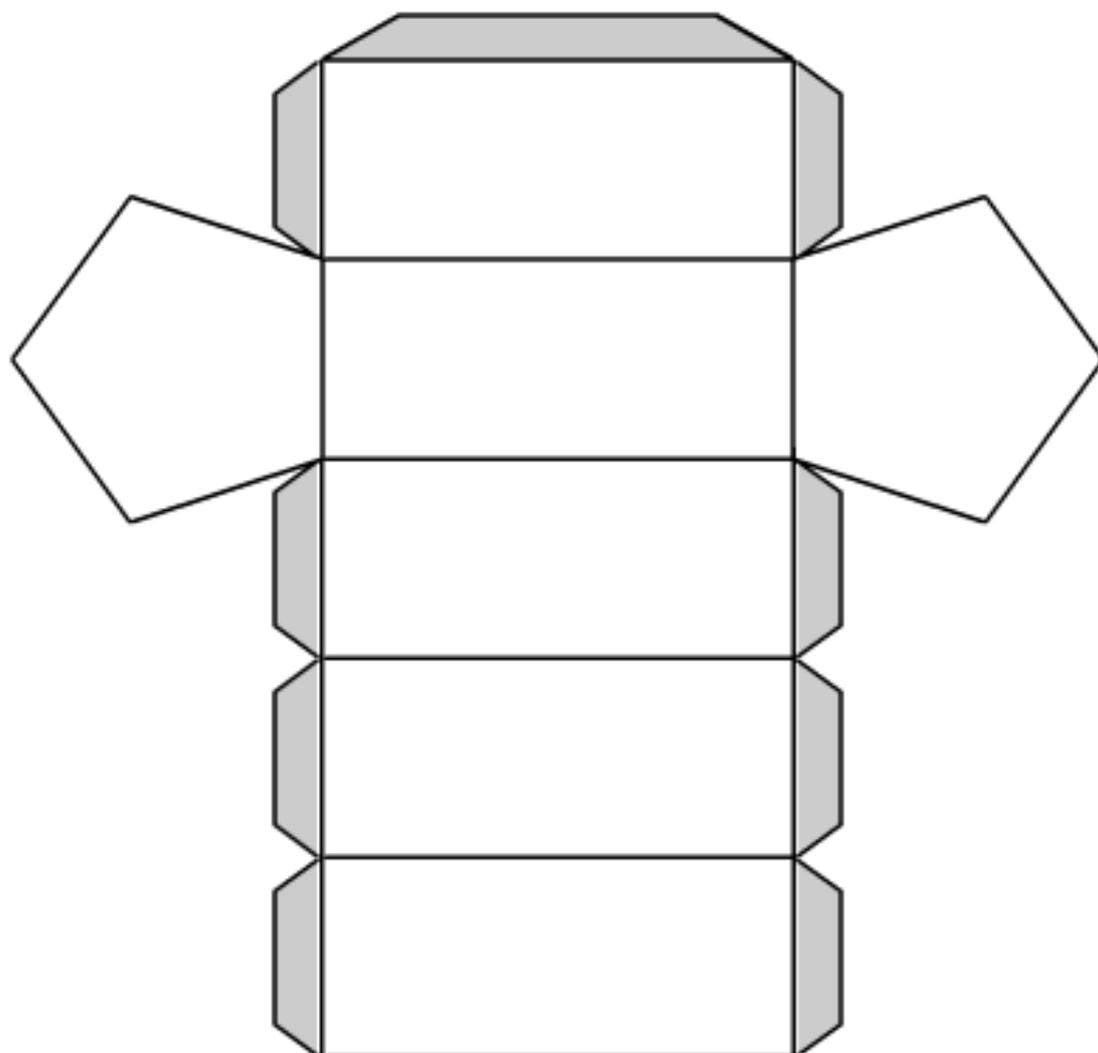


Octahedron



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Pentagonal Prism



Cylinder

