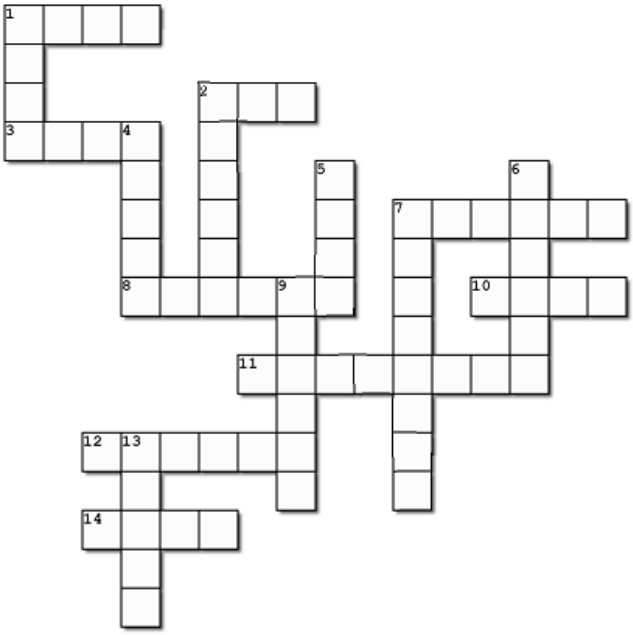
Mathematics

STANDARD 5

GEOMETRY: Solids

WORKSHEET

SOLIDS



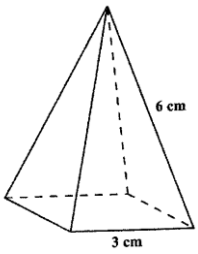
Across

1. the number of faces on a triangular based pyramid
2. The number of faces on a cube
3. Line where 2 faces meet
7. Has 6 rectangular faces
8. The number of edges on a cuboid
10. Has 6 identical square faces
11. Shape of all faces on a triangular pyramid
12. No flat faces
14. the number of edges on a triangular prism

Down

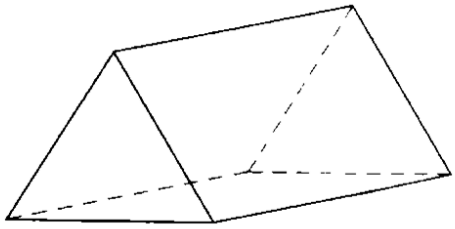
1. Number of vertices on a rectangular pyramid
2. Shape of the cross section of a cube
4. the number of vertices on a cube
5. Geometric shape that makes up a solid
6. Space occupied by a solid
7. cross section is circular
9. Point where 3 edges meet
13. Solid with uniform cross- section

1. A solid with a square base is shown below.



How many edges measure 3 cm?

2. What is the name of the solid shown below?



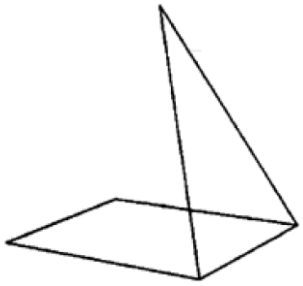
3. What solid contains six identical squares?

4. Name the solid that can be formed using the following faces.

5. What solid has the following faces?

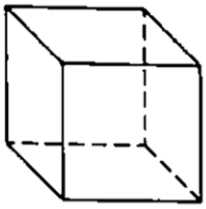
6. Name a solid with uniform cross-section.

7. A solid has 5 vertices. A part of the solid is drawn below.



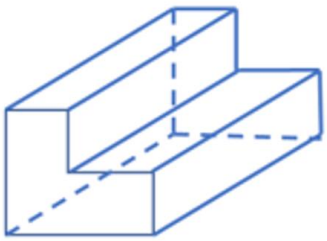
(a) Complete the drawing.
(b) How many edges are there in the solid?

8. Donna has the solid shown below. Each edge measures 9 cm.



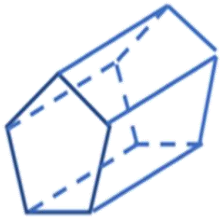
(a) What is the name of the solid?
(b) What is the total length of **all** the edges?
(c) Donna stuck 7 stars on EACH face. How many stars did she use?

9. The following solid has a uniform cross-section.



(i) How many edges are there in the solid?
(ii) How many vertices does the solid have?
(iii) Draw the cross-section of the solid.

10. Brian painted dots on all the faces of the following solid using a number pattern. The number of dots increased by 2 as he moved from face to face.



He painted a total of 77 dots.
What is the smallest number of dots on any face?

ANSWERS

1. 4

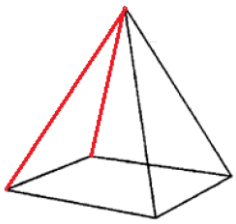
2. Triangular Prism

3. Cube

4. A square based pyramid

5. Cylinder

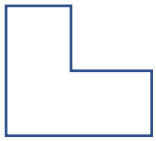
6. Any of the following:
   Cube, Cuboid, Cylinder, Prism. (NOT Pyramid or Cone)

7. (a)  (b) 8 edges

8. (a) Cube
(b) Number of edges = 12
   Length of edge = 9 cm
   Total length = 12 x 9cm = 108 cm
(c) Number of faces = 6
   Number of stars = 6 x 7 = 42 stars

9. (a) 18 edges (6 at the front, 6 at the back and 6 along the length of the solid).

   (b) 12 vertices (6 on the front face and 6 on the back face)

   (c) 

10. There are 7 faces so that if the number of dots were the same on each face, then each face would have 11 dots.
So we start with 11 dots on all 7 faces

11 11 11 11 11 11 11

Leave the middle number as 11 and start changing the other numbers

11 11 11 11 11 11 11

The numbers increase by 2 each time so we take 2 from the number before the circle and add it to the number after the circle. The number sequence now looks like:

11 11 ~~11~~ 11 ~~11~~ 11 11
9 13

11 11 9 11 13 11 11

Looking at the number after 13, we need to add 4 to get it to fit the pattern, so we will take the 4 from the number before 9. The sequence will now look like:

11 ~~11~~ 9 11 13 ~~11~~ 11
7 15

11 7 9 11 13 15 11

The last number will need 6 more to fit the pattern so we take the 6 from the 1st number.

~~11~~ 7 9 11 13 15 ~~11~~
5 17

5 7 9 11 13 15 17

Verify the pattern. Verify the total 5 + 7 + 9 + 11 +13 +15 + 17 = 77

Smallest number of dots = 5