

Drawing nets of 3D shapes – Solutions

Worked answers for each net-identification, dimension, and drawing question.



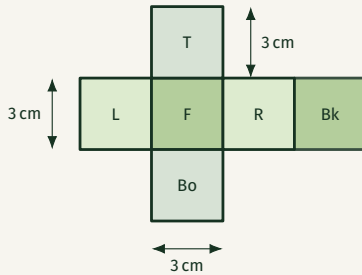
Name _____

Date _____

Solution method

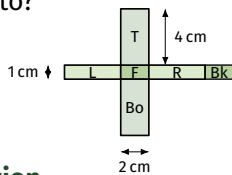
Match each net to the solid it folds into by counting and shape-checking its faces, or use the labelled dimensions to calculate the requested area or volume.

Worked example Which solid does this net fold up into?



This net has 6 equal squares in a cross arrangement, so it folds up into a cube.

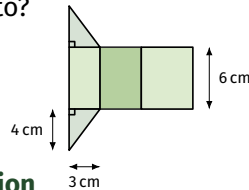
1. Which solid does this net fold up into?



Solution

Cuboid – 3 pairs of matching rectangles

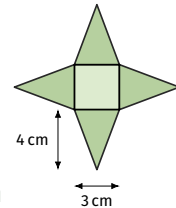
2. Which solid does this net fold up into?



Solution

Triangular prism – 3 rectangles plus 2 triangle ends

3. Which solid does this net fold up into?



Solution

Square-based pyramid

4. How many faces does a cube have?

Solution

6 faces

5. How many rectangular faces does a triangular prism have?

Solution

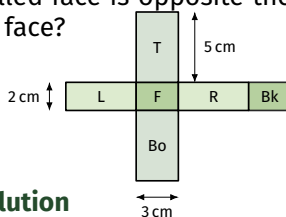
3 rectangular faces

6. How many triangular faces meet at the apex of a square-based pyramid?

Solution

4 triangular faces

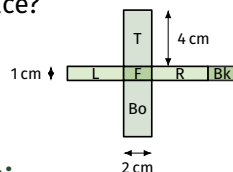
7. On the net shown, which labelled face is opposite the Front (F) face?



Solution

The Back (Bk) face

8. On the net shown, which single face is congruent to the Top (T) face?



Solution

The Bottom (Bo) face

9. A net has 4 triangles attached to the 4 sides of a square. What solid does it make?

Solution

Square-based pyramid

10. A net has 2 triangles and 3 rectangles. What solid does it make?

Solution

Triangular prism

11. Draw and label a net for a cube with edge length 2 cm.

Solution

Six 2 cm squares in a cross, each labelled 2 cm

12. Draw a net for a cuboid that is 5 cm long, 3 cm wide, and 2 cm high.

Solution

Four 5×2 rects + two 5×3 rects above/below one

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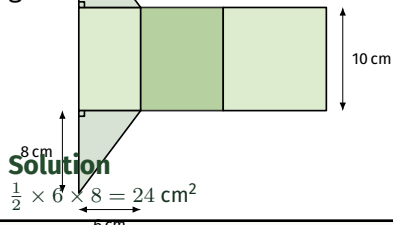
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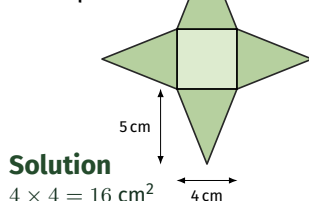
Name _____

Date _____

13. This net folds into a triangular prism. Find the area of one triangular face.



14. This net folds into a square-based pyramid. Find the area of the square base.



15. A cuboid net has three pairs of congruent rectangles. Explain why a cuboid always has exactly 3 pairs of identical faces.

Solution

3 opposite-face pairs (front/back, left/right, top/bottom)

16. Draw a net for a triangular prism with a 5 cm base, 12 cm height, and 15 cm length.

Solution

3 rects (5,12,13 wide) each 15 cm long + 2 right-triangle ends (legs 5, 12)

17. Draw a net for a square-based pyramid with base side 6 cm and slant height 8 cm.

Solution

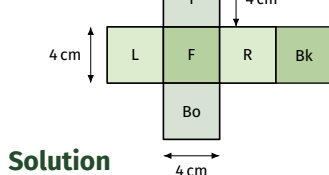
6 cm square base + 4 triangles (base 6, slant 8) folded outward

18. Two students draw two different-looking nets for the same cube. Explain how both can be correct.

Solution

Several 6-square layouts fold correctly (cross, staircase)

19. Find the total area of all 6 faces shown in this net.



20. A cuboid measures 8 cm by 5 cm by 3 cm. List the area of each of the 3 different-sized faces in its net.

Solution

40, 24, 15 cm² each

21. A cube's net has total area 150 cm². Work out the edge length of the cube.

Solution

$s^2 = 25 \Rightarrow s = 5 \text{ cm}$

22. A closed cuboid box needs 220 cm² of card. Its base is 10 cm by 5 cm. Find its height.

Solution

$100 + 30h = 220 \Rightarrow h = 4 \text{ cm}$

23. Box A is 8 cm by 6 cm by 4 cm. Box B is 12 cm by 4 cm by 4 cm. Which net uses less card, and by how much?

Solution

A:208, B:224 cm². A saves 16

24. A cube's net has total area 96 cm². Find the volume of the cube.

Solution

$s = 4 \text{ cm}$, Volume = $4^3 = 64 \text{ cm}^3$

25. A cuboid net is drawn with faces 6 cm by 4 cm, 6 cm by 3 cm, and 4 cm by 3 cm (one of each pair). Find the volume of the cuboid.

Solution

Volume = $6 \times 4 \times 3 = 72 \text{ cm}^3$

26. A triangular prism net has a right-angled cross-section with legs 9 cm and 12 cm, and length 20 cm. Find the total area of the net.

Solution

Hyp 15: $108 + 720 = 828 \text{ cm}^2$

27. Explain why a square-based pyramid's net cannot be made from 5 identical squares, and state what shapes are needed instead.

Solution

5 squares make an open cube, not a pyramid