

2D and 3D Shapes: practice solutions, Kindergarten – download the PDF

Written solutions to the chapter problems. Check each step, then correct yourself.

1 Name the flat shapes



Shape A is round with no straight sides, so it is a **circle**. Shape B has four equal sides and four corners, so it is a **square**. Shape C has three sides and three corners, so it is a **triangle**.

Answer: A is a circle, B is a square, and C is a triangle.

2 Round like a clock



A shape that is round all the way around and has no corners is a **circle**.

Answer: the clock face looks like a circle.

3 Corners of a triangle



A triangle has three corners where its sides meet, and it has three straight sides.

Answer: **3** corners and **3** sides.

4 Name the solid



- a. A basketball is round all over: it is a **sphere**.
- b. A soup can has two flat round faces: it is a **cylinder**.
- c. A party hat has one round base and a pointy tip: it is a **cone**.
- d. A die has six square faces: it is a **cube**.

5 Above or below?



The ball B is higher than the box A, so B is **above** it. The can C is lower than the box A, so C is **below** it. The cone D stands at the side of the box, so D is **beside** it.

6 No straight sides



A square has four straight sides and a triangle has three straight sides. A circle is curved all the way around.

Answer: the **circle** has no straight sides.

7 Match the object



- A door is a **rectangle** (two long sides and two short sides).
- A pizza slice is a **triangle** (three sides).
- A honeycomb cell is a **hexagon** (six sides).
- A coin is a **circle** (perfectly round).

8

Count the sides

Put a dot on one corner, then touch each side and count: one, two, three, four, five, six. The shape has **6** sides and **6** corners.

Answer: it is a **hexagon**.

9

Four sides

A square has four sides and a rectangle has four sides. A triangle has three sides, and a circle has none.

Answer: the **square** and the **rectangle**.

10

Sort by corners

Shape 1 is a circle (no corners). Shape 2 is a triangle (**3** corners). Shape 3 is a square (**4** corners). Shape 4 is a circle (no corners). Shape 5 is a hexagon (**6** corners). Shape 6 is a rectangle (**4** corners).

Answer: **has corners** are shapes 2, 3, 5 and 6 (**4** shapes). **No corners** are shapes 1 and 4 (**2** shapes). Check: $4 + 2 = 6$ shapes in all.

11

In front or behind?

The can B covers part of the cube A, so it is closer to you. The can B is **in front of** the cube. The cube A is **behind** the can.

12

Who is next to the ball?

The ball is the sphere in the middle. On one side is the cube, and on the other side is the cone.

Answer: the **cube** and the **cone** are next to the ball.

13

Cut a square

The dashed line goes from one corner to the opposite corner. It cuts the square into two parts, and each part has three sides and three corners.

Answer: you get **2 triangles**.

14

Two flat circles

A cone has only one flat round face. A sphere has no flat face. A cylinder has one round face on top and one on the bottom.

Answer: the **cylinder**.

15

Sides in a pattern

One triangle has **3** sides, so **2** triangles have $3 + 3 = 6$ sides. One square has **4** sides.

In all: $6 + 4 = 10$.

Answer: Ava's shapes have **10** sides in all.

16

Mystery shapes

- a. Six sides and six corners: a **hexagon**.
- b. Three corners (and three sides): a **triangle**.
- c. Flat and round with no corners: a **circle**.

17

Trace the faces

The bottom of a soup can is a flat round face, so she draws a **circle**. Each face of a die is a flat face with four equal sides, so she draws a **square**.

Answer: first a circle, then a square.

18 Odd one out



- a. The **triangle** does not belong, because it has **3** sides while the other two shapes have **4** sides.
- b. The **sphere** rolls in every direction, because it is round all over. The cube has only flat faces, so it does not roll, and the cylinder and the cone roll only in some ways.

19 Triangles on the wall



Count the triangles in the picture: there are **6** in the hexagon. Add the **3** tiles next to it:
 $6 + 3 = 9$.

Answer: there are **9** triangles in all.

20 The toy shelf



- a. The cone is on the shelf above the cube, so the **cone** is above the cube.
- b. The cylinder is on the shelf below the sphere, so the **cylinder** is below the sphere.
- c. The sphere stands on the same shelf at the side of the cube, so the **sphere** is next to the cube.

21 A square and a triangle



The square has **4** sides and the triangle has **3** sides: **$4 + 3 = 7$** . The square has **4** corners and the triangle has **3** corners: **$4 + 3 = 7$** .

Answer: **7** sides and **7** corners.



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