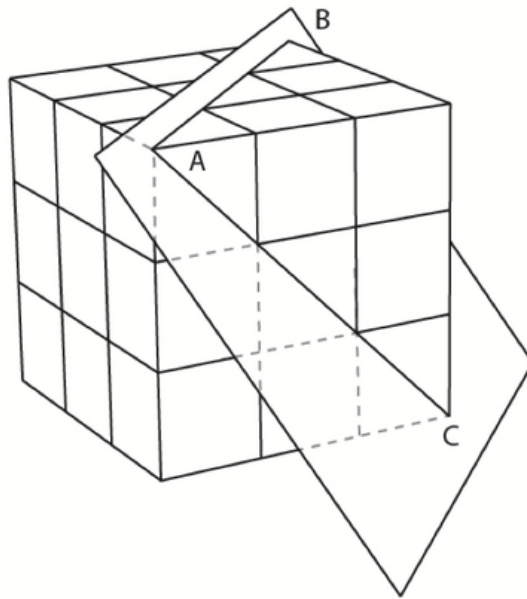
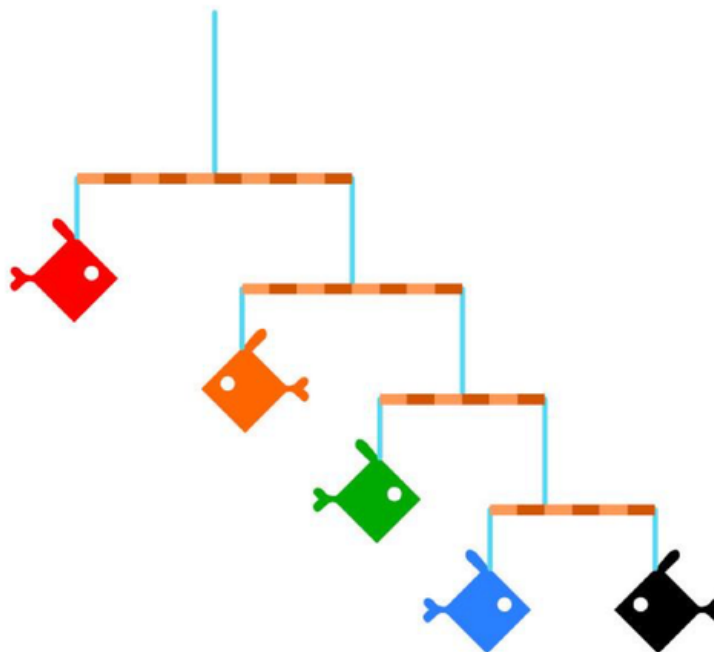


- Q0.1** A cube is created by stacking 27 smaller cubes as shown in the figure. A plane, going through vertices A, B and C, cuts the cube as shown in the figure. How many smaller cubes will get cut?



- Q0.2** A digital clock reads hours and minutes. The sum of the digits it displays at 12:00 is 3 ($1+2+0+0$). At 12:01 it is 4 ($1+2+0+1$) and so on. What is the sum of all the digits it displays from 12:00 to 12:59?
- Q0.3** A smaller square of 5 cm is placed inside a bigger square such that all 4 corners of the smaller square are touching the sides of the bigger square. If the smallest distance between the corners of the two squares is 3 cm, what is the area of the bigger square in sq. cm that falls outside smaller one?

- Q0.4** The image shows a hanging sculpture created by tying fish-shaped cutouts of different weights by blue strings on brown sticks, as shown. The sticks and strings have negligible weight. The sculpture remains balanced after it is suspended from a ceiling. If the weight of the black fish is 5 grams, what is the weight (in grams) of the red fish?



- Q0.5** A typical football is made by stitching together 12 pentagons and 20 hexagons. How many vertices (junctions) are there in such a football?