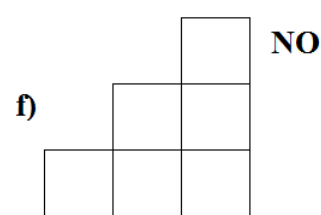
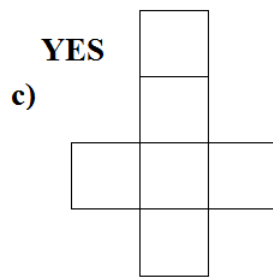
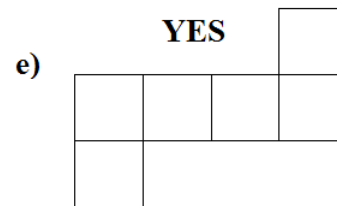
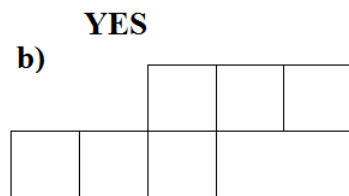
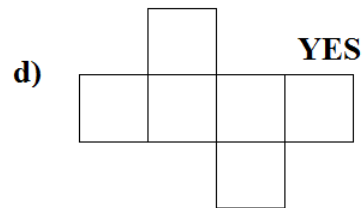
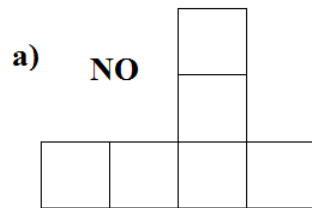


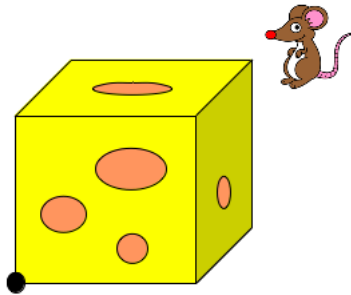
Cubes, Nets and Rectangular Boxes

1. Circle all the nets which can fold into a cube.



2. Draw another net of the cube (which is not among those pictured above):

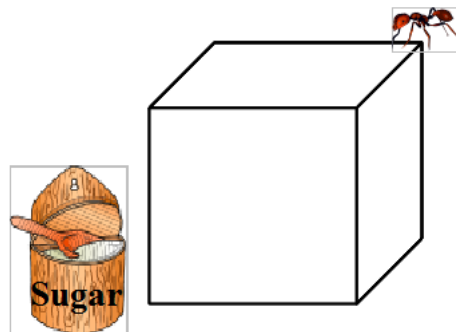
3. A mouse sits on a vertex of a cube made of tasty cheese. It wants to go to the opposite vertex. What is the fastest way? Is there more than one fastest way? Remember, mice can eat cheese!



Solution: A straight line through the cheese

4. A cube is made out of sticks glued together at the vertices. An ant sits at a vertex and wants to crawl to the opposite vertex to get some sugar. What is the fastest way? Is there more than one fastest way?

Solution: By getting to the sugar using any three sticks

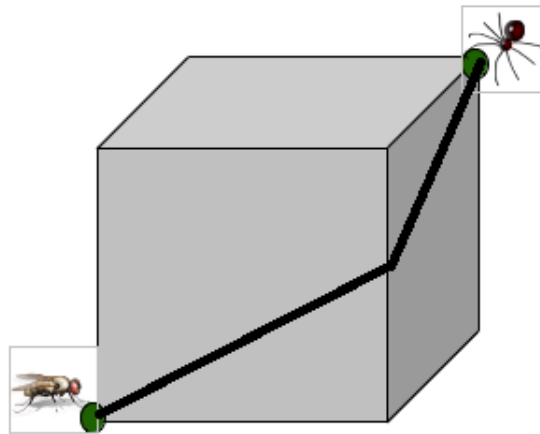


5. How many “quickest” ways are there to get to the sugar?

Solution: 6

6. A spider and a fly are sitting on the opposite vertices of a solid wooden cube. Find (and draw) the shortest path from the spider to the fly on the face of the cube. Is there more than one path?

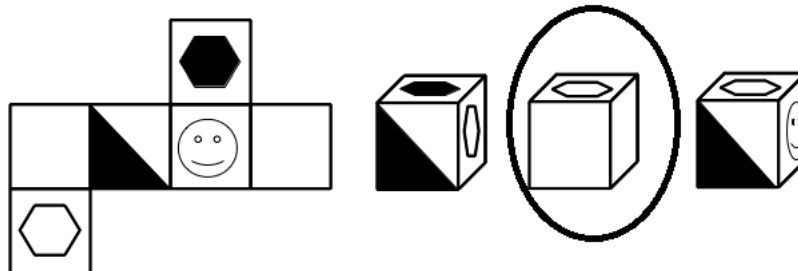
Solution: Yes, for example:



7. Find several more routes with the same length. How many did you find?

Solution: 6

8. Below is a wrapper for a piece of candy shaped as a cube. Which of the three wrapped candies does our wrappers correspond to?



9. Which of the following nets can be folded to make a parallelepiped (rectangular box)?

