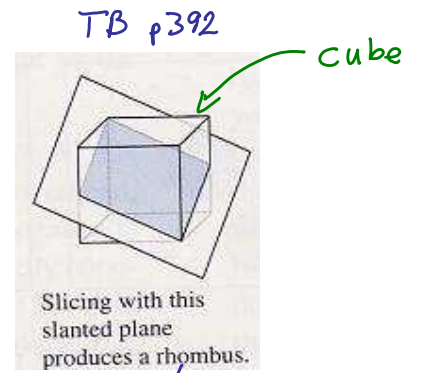
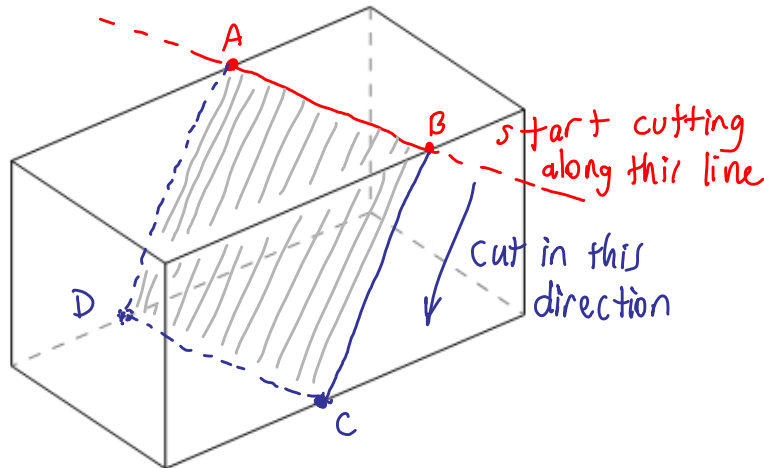


1. Draw a plane slicing the following rectangular prism to obtain a parallelogram that is not a rectangle as the cross section.

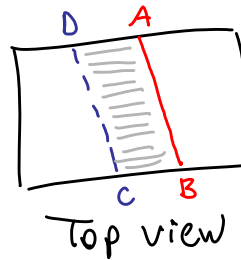
one possible answer:



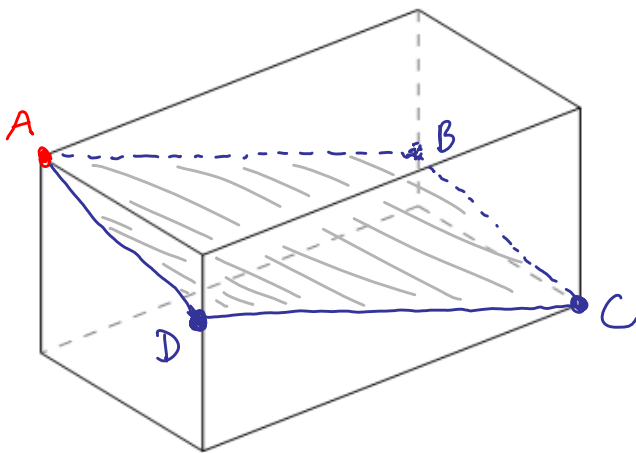
TB p392
 cube
 parallelogram with all edges of equal length
 TB: textbook
 AM: activities manual

ABCD is a parallelogram but not a rectangle because diagonals \overline{AC} and \overline{BD} have different lengths.

\overline{BD} is longer than \overline{AC}

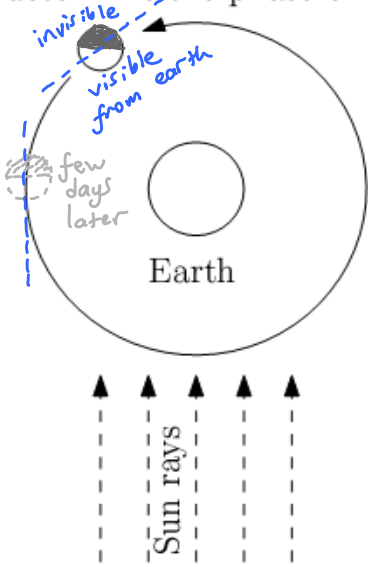


another solution:

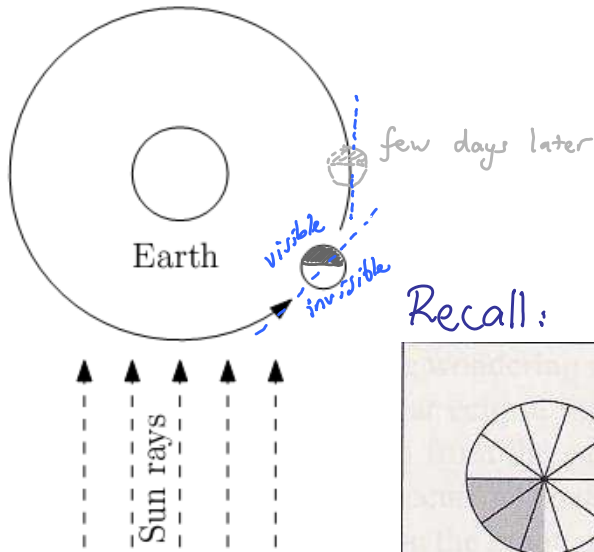


\overline{AC} is longer than \overline{BD}

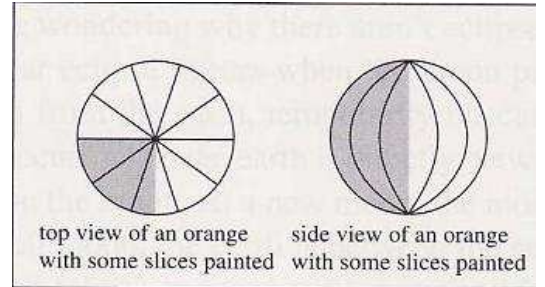
2. In the following figures describe how the moon appears to a person on the earth (new moon, quarter moon, ...) and determine the phase of the moon (waxing, waning).



Top view

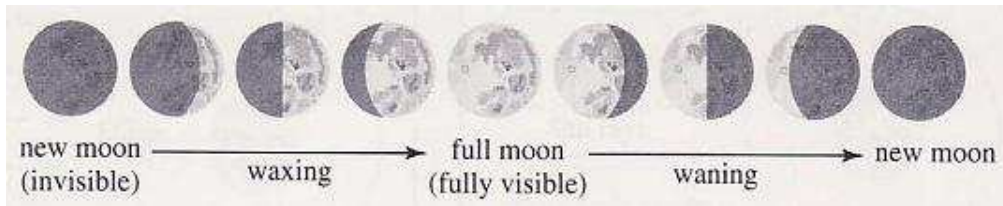


Recall: AM p253



3/4 of the visible side is bright
 few days later we see half moon,
 so the visible part is getting
 smaller, the moon is waning.

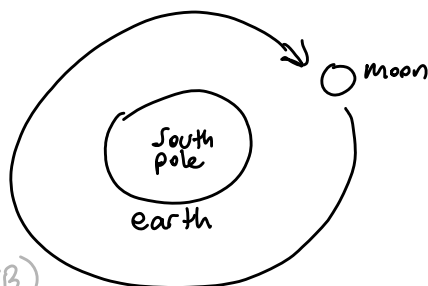
1/4 of the visible side is bright
 few days later we see half moon, so the visible
 part is getting larger, the moon is waxing.



side view

Note that we are looking at the earth from above the north pole.

The reason is that if we look from below south pole, we would see the moon rotating clockwise around the earth:

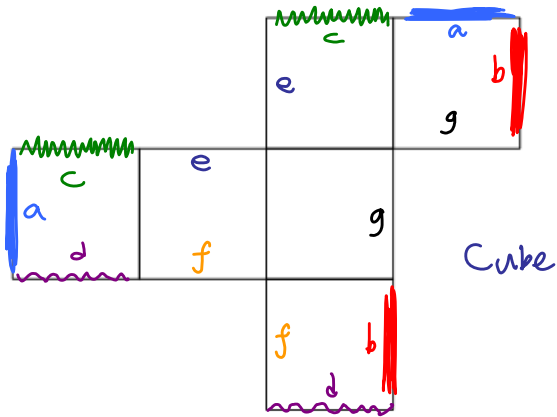


Question:

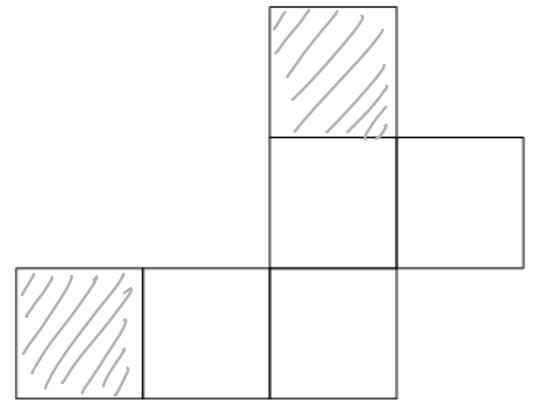
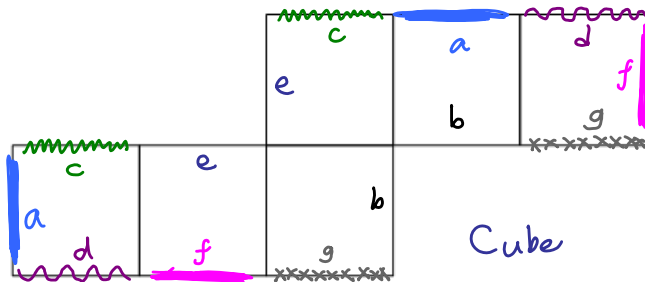
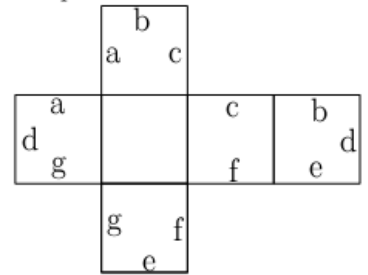
Which direction is the earth rotating?

(related to #4 p393 TB)

3. Among the following nets, find which ones don't fold to give a cube (give reason). For the ones that fold to give a cube, write the gluing labels (a a, b b, ...) next to edges that would be glued together.



Sample:



Not a cube:

as we fold the two shaded squares overlap, we get an open top box.

Exercise: find two other nets that give a cube.