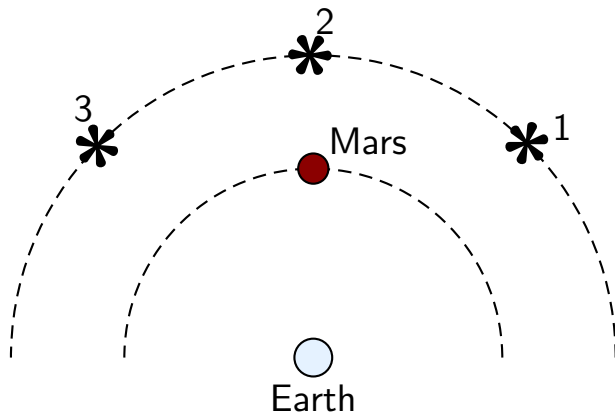


# Question 1

In a geocentric model, Earth, Mars and the background stars are aligned as illustrated on one day.



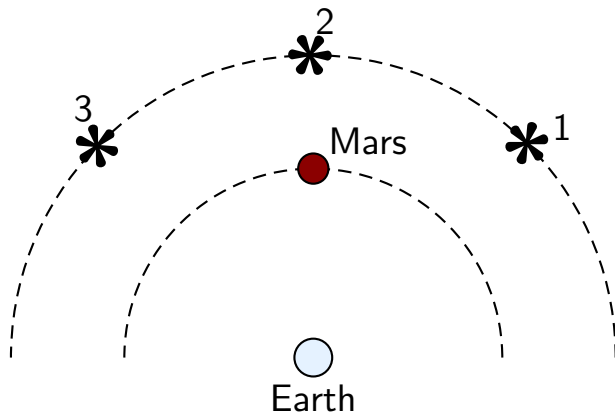
Suppose that Mars and the stars orbit clockwise.

Assuming that Mars and the stars orbit clockwise at the same rate (i.e. every day they cover the same angle), which of the following is true about Mars *viewed from Earth as the days pass*?

1. Mars aligns with the same background star.
2. Mars aligns with different background stars (in order  $1 \rightarrow 2 \rightarrow 3 \dots$ ).
3. Mars aligns with different background stars (in order  $3 \rightarrow 2 \rightarrow 1 \dots$ ).
4. Mars aligns with various background stars but the pattern is random.

## Question 2

In a geocentric model, Earth, Mars and the background stars are aligned as illustrated on one day.



Suppose that Mars and the stars orbit clockwise.

Assuming that Mars and the stars orbit clockwise but Mars does so at a faster rate than the stars, which of the following is true about Mars *viewed from Earth as the days pass*?

1. Mars aligns with the same background star.
2. Mars aligns with different background stars (in order  $1 \rightarrow 2 \rightarrow 3 \dots$ ).
3. Mars aligns with different background stars (in order  $3 \rightarrow 2 \rightarrow 1 \dots$ ).
4. Mars aligns with various background stars but the pattern is random.