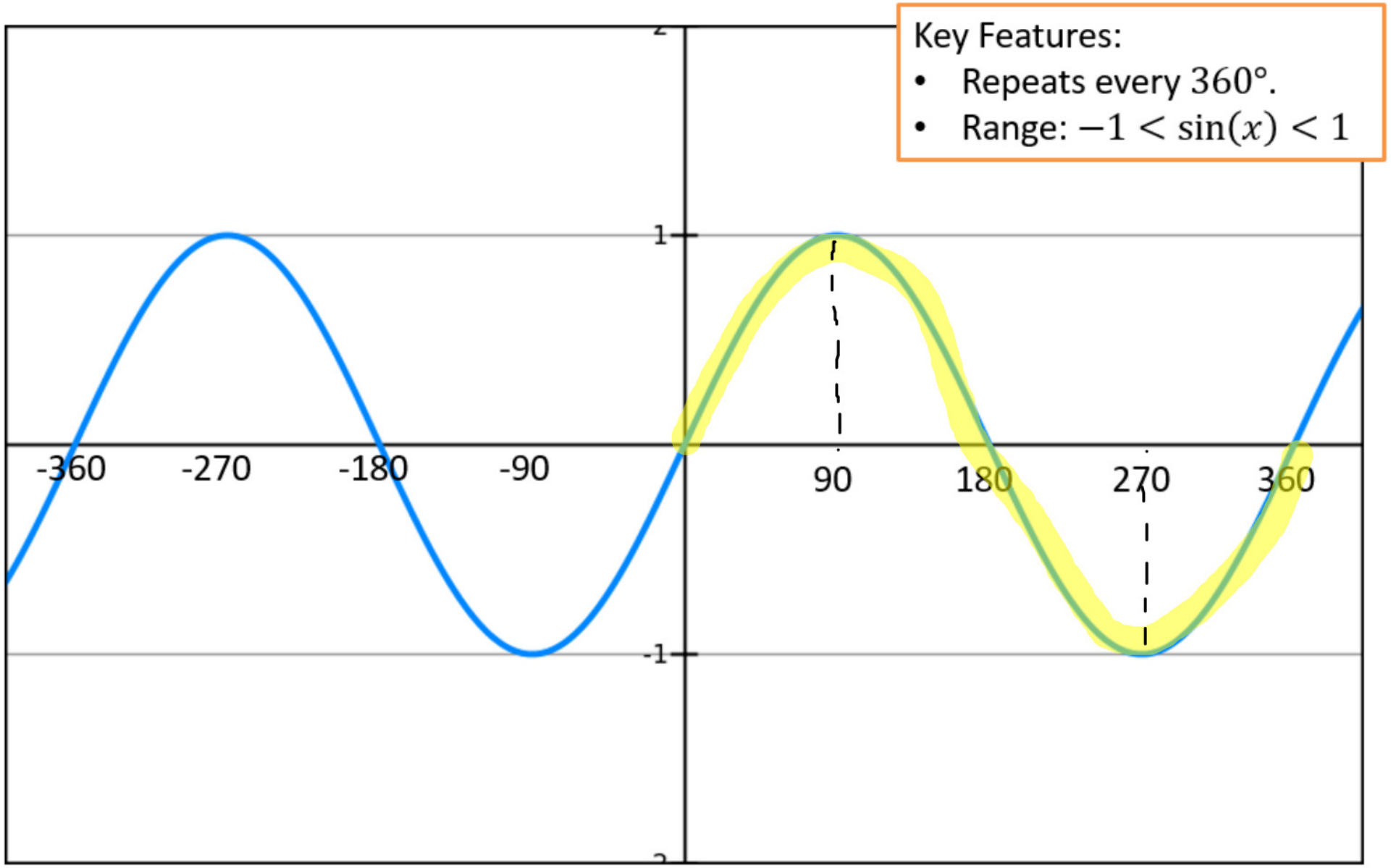
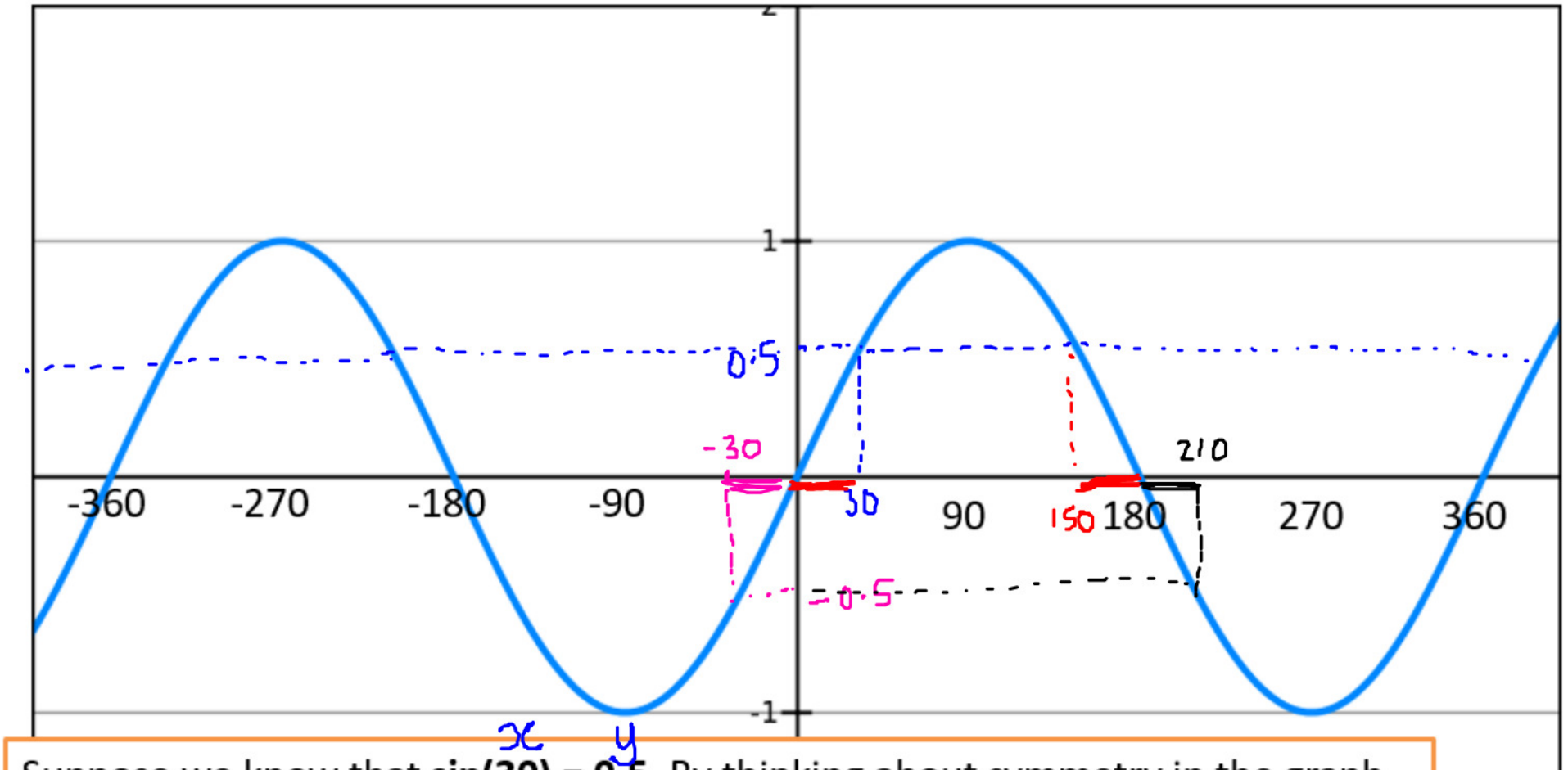
Sine Graph

ODD





Suppose we know that **sin(30) = 0.5**. By thinking about symmetry in the graph, how could we work out:

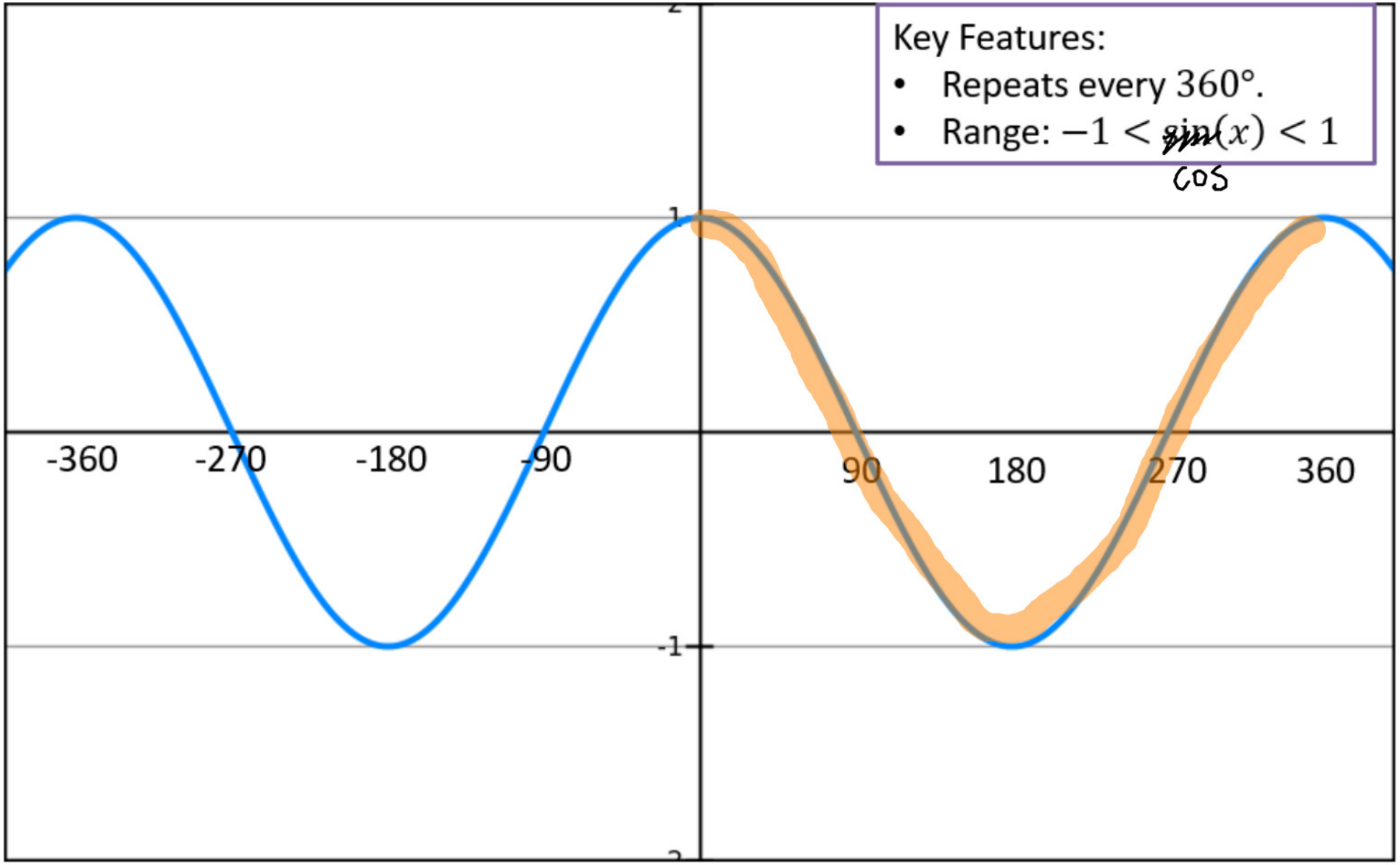
sin(150) = 0·5

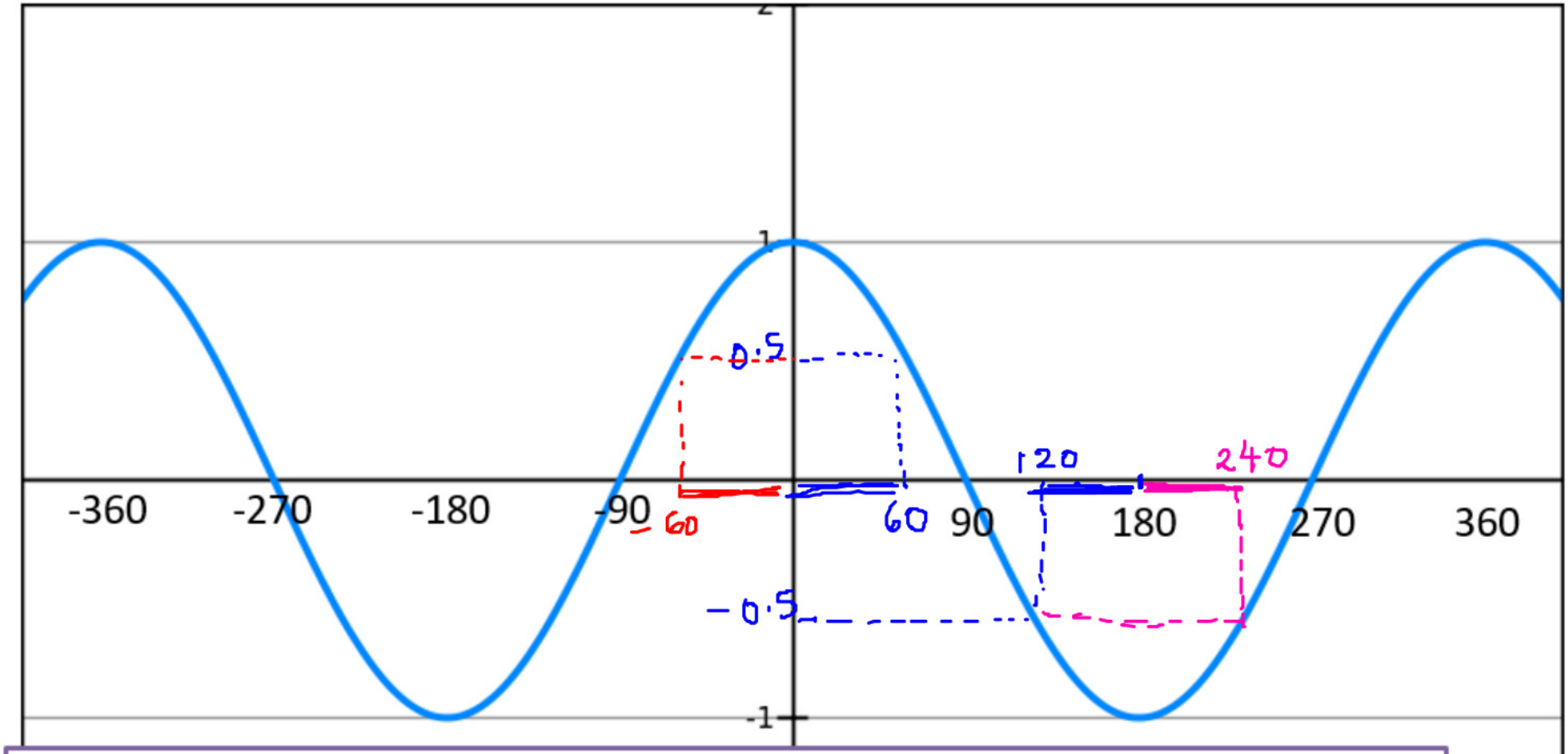
sin(-30) = -0·5

sin(210) = − 0·5

Cosine Graph

EVEN FUNCTION





Suppose we know that **cos(60) = 0.5**. By thinking about symmetry in the graph, how could we work out:

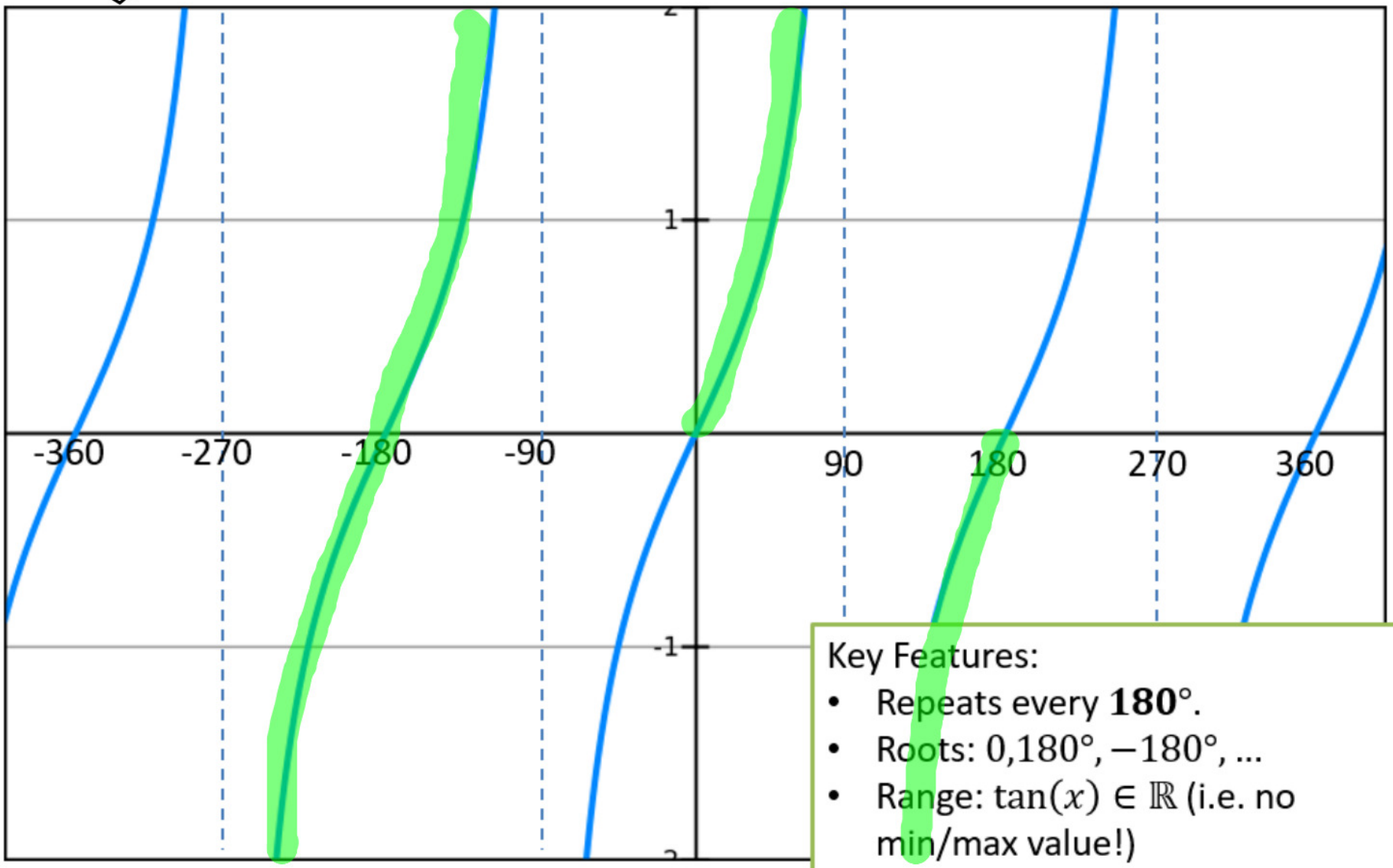
cos(120) = −0.5

cos(-60) = 0.5

cos(240) = −0.5

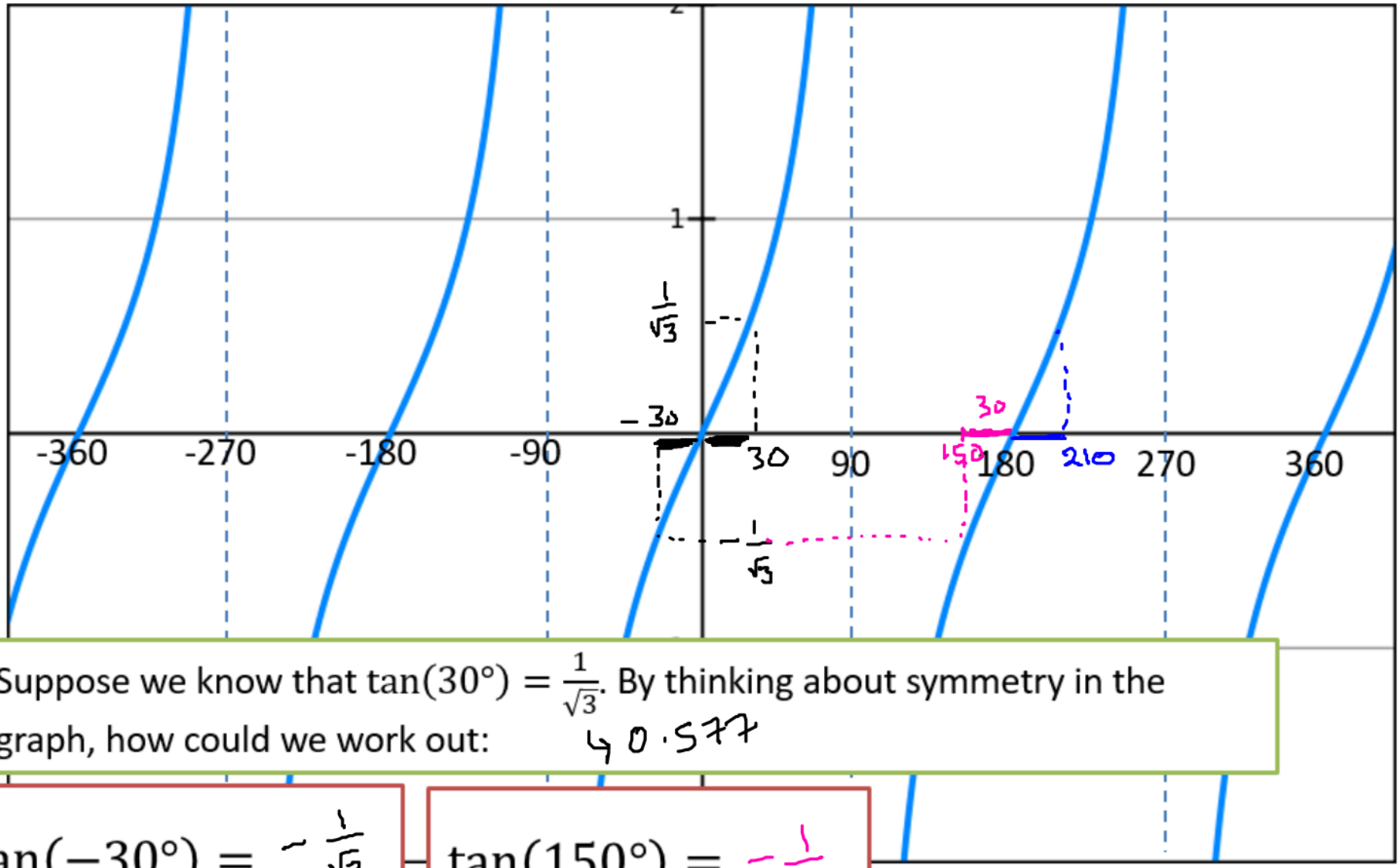
Tangent Graph

ODD



Key Features:

- Repeats every $\mathbf{180°}$.
- Roots: $0, 180°, -180°, \ldots$
- Range: $\tan(x) \in \mathbb{R}$ (i.e. no min/max value!)
- Asymptotes: $x = \pm 90°, \pm 270°, \ldots$



Suppose we know that $\tan(30°) = \frac{1}{\sqrt{3}}$. By thinking about symmetry in the graph, how could we work out:

≈ 0·577

$\tan(-30°) = -\frac{1}{\sqrt{3}}$

$\tan(150°) = -\frac{1}{\sqrt{3}}$

$\tan 210 = \frac{1}{\sqrt{3}}$

Ex 9F