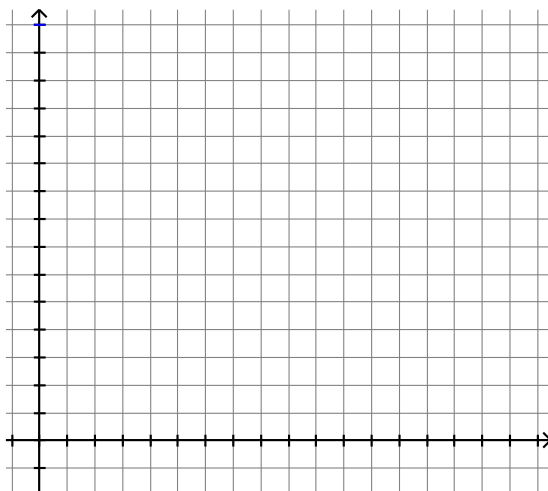


MODELLING REAL SITUATIONS WITH TRIGONOMETRIC FUNCTIONS #1

A Ferris wheel has a diameter of 60 m and its centre is 32 m above the ground. It rotates once every 48 seconds. By the time the Ferris wheel starts to rotate at a constant speed, Jack finds himself 32 m above the ground and rising.



PARTNER A: Determine the maximum and minimum heights reached and find the amplitude.

Partner B check and initial: _____

PARTNER B: Determine the centre of the graph and the function's vertical displacement. Label the vertical axis.

Partner A check and initial: _____

PARTNER A: Determine the period of the function and label the horizontal axis.

Partner B check and initial: _____

PARTNER B: Graph the function.

Partner A check and initial: _____

PARTNER A: Write an equation that generates the graph.

Partner B check and initial: _____

PARTNER B: Write another equation that generates the graph.

Partner A check and initial: _____

PARTNER A: Determine the first time that Jack reaches a height of 54 m above the ground.

Partner B check and initial: _____

PARTNER B: For how many seconds is Jack more than 40 m above the ground during the first rotation?

Partner A check and initial: _____