

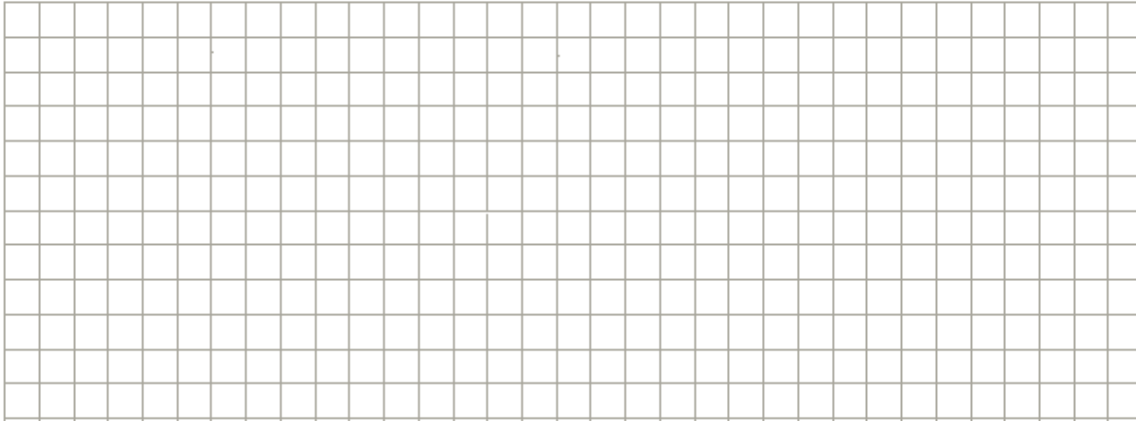
Name: _____

Date: _____

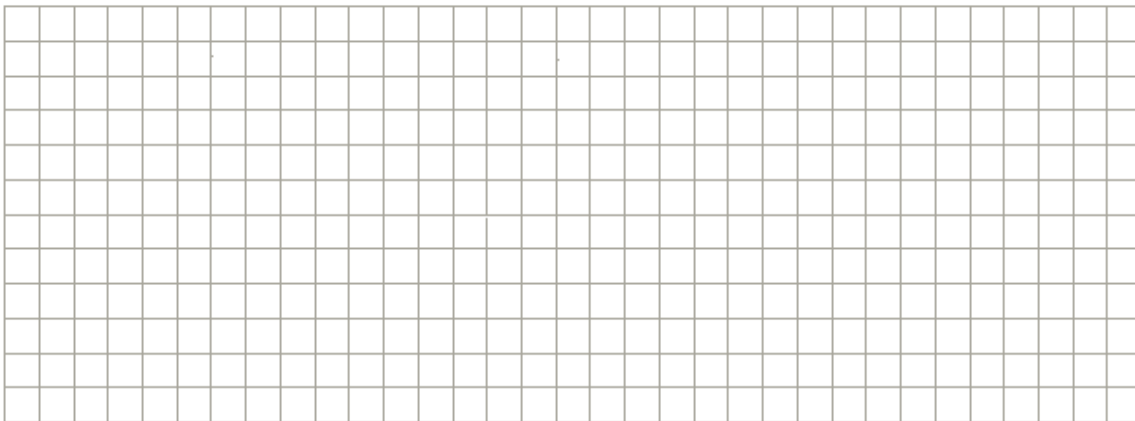
MCR 3UR~ Chapter 6 PRACTICE Test

1. Sketch the following functions:

a) $f(x) = -2\sin[4(x + 60)] + 3$



b) Three cycles of a sinusoidal function that has a period of 180° , an amplitude of 0.5, and whose equation of the axis is $y = -5$. (Write the equation first)



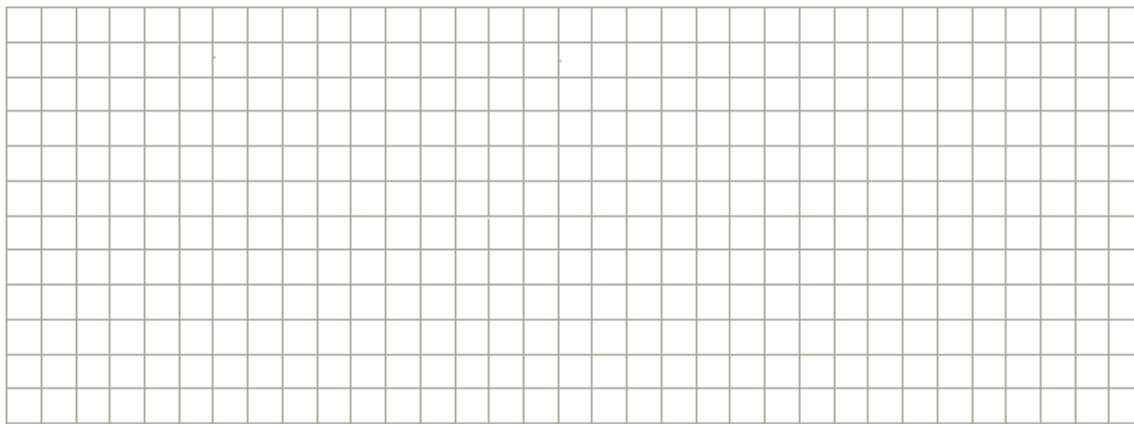
Name: _____

Date: _____

2. The function $f(x) = \cos x$ undergoes a reflection in the x-axis, a vertical stretch by a factor of 3, a horizontal compression by a factor of 4, a horizontal translation 2 units left and vertical translation 1 unit down.

a) Write the resulting equation of the function.

b) Sketch the resulting graph.



Name: _____

Date: _____

APPLICATION

A clock is hanging on a wall. The length of the minute hand is 22 cm, and the lowest that the tip of the minute hand ever reaches above the ground is 304 cm. [3, 2]

a) What are the equation of the axis, amplitude, and period (in minutes) of the function that represents the tip of the minute hand's height above the ground?

b) Determine the equation of the sinusoidal function that represents the tip of the minute hand's height above the ground. Assume that at $t=0$ min, the time is 5 p.m.

TIPS

Kendra is riding a Ferris at a constant speed of 15 km/h. The boarding height for the wheel is 2 m, and the wheel has a diameter of 16 m. What is the equation of the function that describes Kendra's height in terms of time, assuming we start timing when Kendra is at the mid-point on the wheel. [4]