

Precalculus - Graphs of Trigonometric Functions - Test

Common Core F-TF.B.5, F-IF.C.7e, F-TF.B.7 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 20-point test covers amplitude, period, phase shift, graphs of sine, cosine and tangent, and periodic models (F-TF.B.5, F-IF.C.7e). You have 45 minutes. Show your work.

About this test

- Grade: Precalculus
- Chapter: Graphs of Trigonometric Functions
- Standards: F-TF.B.5, F-IF.C.7e, F-TF.B.7
- Time: 45 minutes
- Total: 20 points

Question 1 - Read the equation [2 pts]

For $y = -3\sin\frac{\pi x}{2} + 4$, state the amplitude, period and midline.

Question 2 - Phase shift [2 pts]

Write $y = \cos\left(2x - \frac{\pi}{2}\right)$ in the form $\cos(b(x-h))$ and give the period and phase shift.

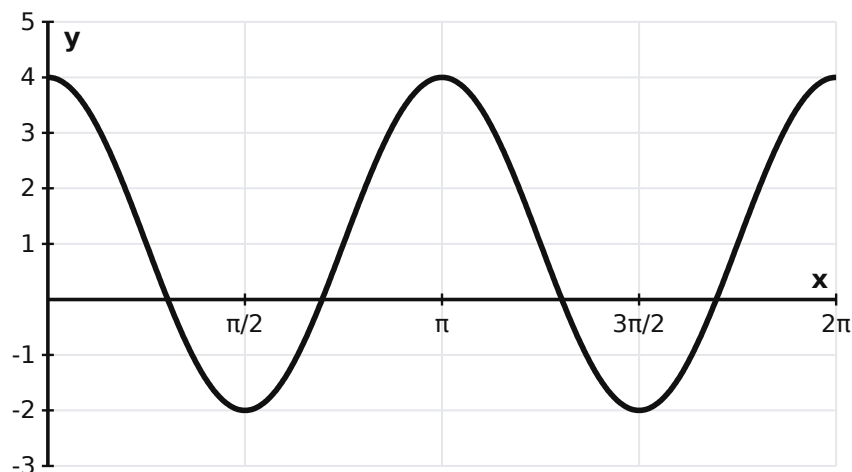
Question 3 - Evaluate [2 pts]

Find $y = 4\cos\frac{x}{2}$ for $x = 0$, π and 2π .

Question 4 - Tangent [2 pts]

Find the period of $y = \tan 3x$ and the smallest positive x at which it has a vertical asymptote.

Question 5 - Read a trig graph [3 pts]



A cosine-shaped graph.

The graph shows $y = a \cos(bx) + k$. (a) State the amplitude and period. (b) State the midline and the range. (c) Write the equation.

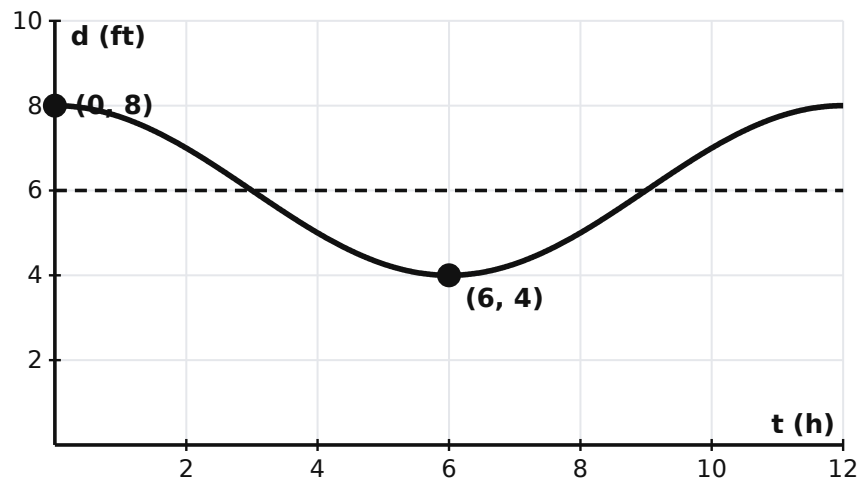
Question 6 - Write an equation [2 pts]

Write a sine function with amplitude 4, period 6π and no shifts.

Question 7 - Range [2 pts]

Find the range of $y = -2\sin x + 3$.

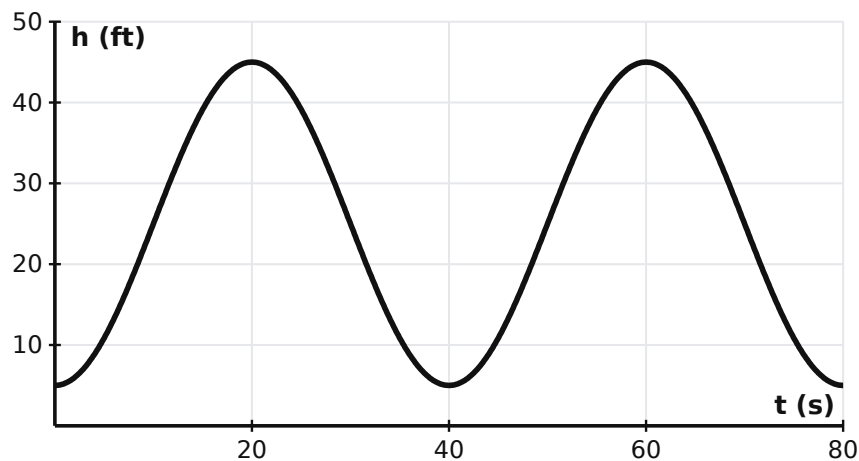
Question 8 - Tide model [3 pts]



Depth of water in feet.

The depth is $d(t) = 6 + 2\cos\left(\frac{\pi t}{6}\right)$ feet, t in hours. (a) Find $d(3)$. (b) State the period. (c) Find the times in $[0, 12]$ when the depth is 7 ft.

Question 9 - Ferris wheel [2 pts]



Height of a rider.

A rider's height is $h(t) = 25 - 20\cos\left(\frac{\pi t}{20}\right)$ feet. Find the greatest height and $h(10)$.