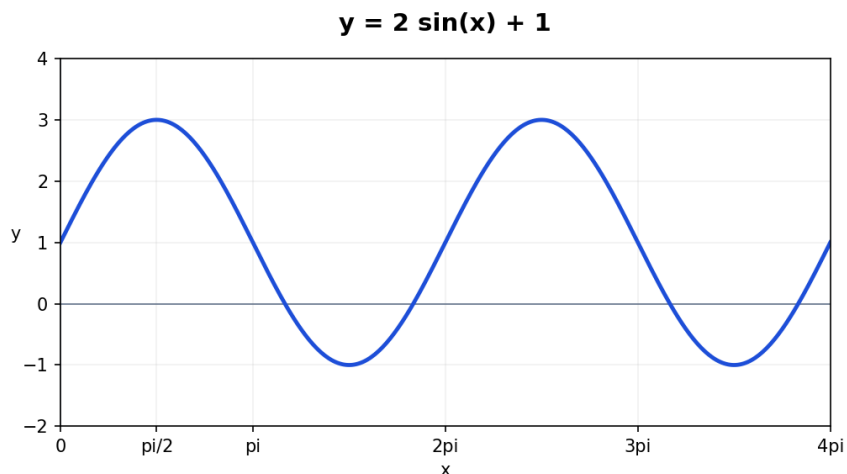


Problems | Name: _____

6.1 Amplitude, Period, and Midline

6.1.1. For $y = 2\sin x + 1$, find amplitude, period, midline, and range.



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Read the vertical extremes and distance between repeats.

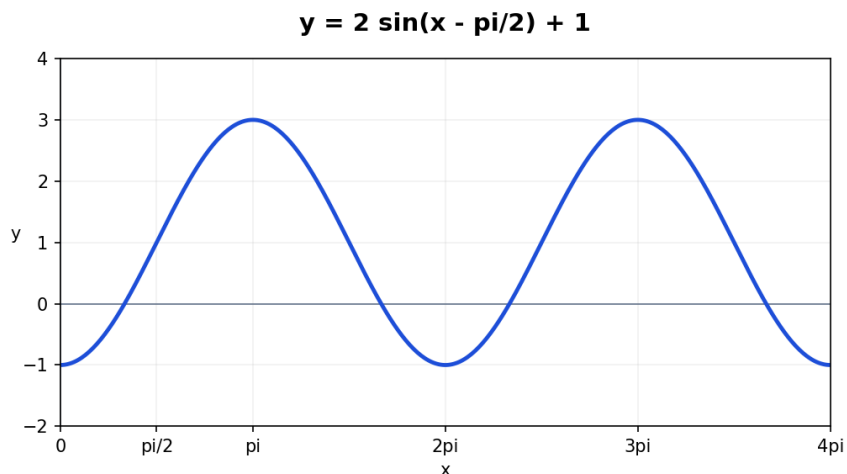
6.1.2. Find the period of $y = -4\cos(3x)$.

6.1.3. A sine model has period 8. Find a positive frequency coefficient.

Problems | Name: _____

6.2 Phase Shift

6.2.1. For $y = 2\sin(x - \pi/2) + 1$, find the shift and the value at $x = \pi/2$.



The graph crosses its midline upward at $x = \pi/2$.

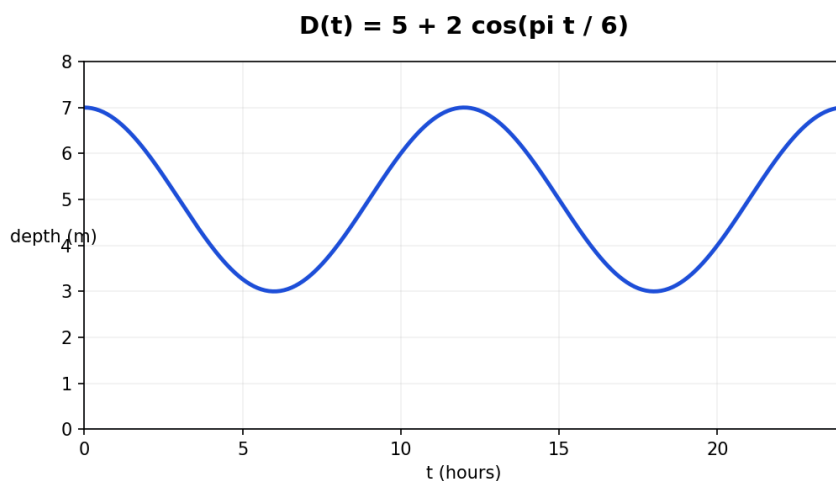
6.2.2. Factor the argument and find the shift of $y = \cos(3x + \pi)$.

6.2.3. Write a sine function of amplitude 1, period 2π , shifted right $\pi/3$.

Problems | Name: _____

6.3 Modelling Periodic Situations

6.3.1. Water depth is $D(t) = 5 + 2\cos(\pi t/6)$ meters with t in hours. Find maximum, minimum, and repeat time.



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Time is in hours and depth in meters.

6.3.2. For the depth model, find depth at $t=3$ and $t=6$ hours.

6.3.3. A temperature cycles from 12 to 28 degrees every 24 hours and is maximal at $t=0$. Give a model.