

Watch. Practice. Understand. | Lesson 170

The Secret in Pre-Cal of Making Trigonometric Graphs and Analysis

Watch the matching video: <https://www.youtube.com/watch?v=P6kuOAflhhA>

Practice focus: Sine and cosine graphs

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 Find amplitude, period and midline of $y = 3\sin(2x) - 1$.

02 For $y = 2\cos(x - \pi/3)$, identify the horizontal shift and range.

03 List five key points of one cycle of $y = \sin x$ on $[0, 2\pi]$.

04 A wheel's rider height is $h(t) = 12 - 10\cos(\pi t/15)$ meters. Find minimum, maximum and period.

Worked answers | Lesson 170

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Practice focus: Sine and cosine graphs

Original extra practice matched to the listed lesson topic.

01 Find amplitude, period and midline of $y = 3\sin(2x) - 1$.

Amplitude 3; period $2\pi/2 = \pi$; midline $y = -1$.

02 For $y = 2\cos(x - \pi/3)$, identify the horizontal shift and range.

Shift right $\pi/3$; range $[-2, 2]$.

03 List five key points of one cycle of $y = \sin x$ on $[0, 2\pi]$.

$(0,0)$, $(\pi/2,1)$, $(\pi,0)$, $(3\pi/2,-1)$, $(2\pi,0)$. Join smoothly.

04 A wheel's rider height is $h(t) = 12 - 10\cos(\pi t/15)$ meters. Find minimum, maximum and period.

Minimum 2 m; maximum 22 m; period $2\pi/(\pi/15) = 30$ seconds if t is in seconds.