Break-Ground:

Trig Function BreakGround

Two young mathematicians think about triangles.

Check out this dialogue between two calculus students (based on a true story):

Devyn: Hey Riley, what is that?

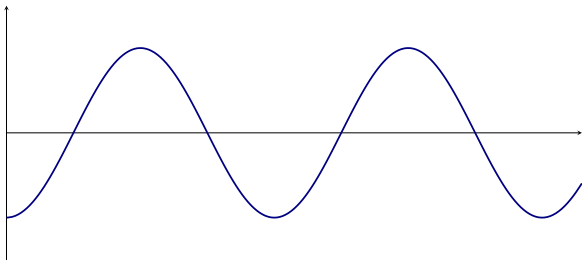
Riley: I hooked a weak spring to the bottom of this shelf, then hung a pen on it. I'm watching the pen bounce up and down.

Devyn: Sure, I can see that.

Riley: See how the pen starts down at the bottom, bounces up to the top, then back to the bottom again?

Devyn: Yeah. It's just repeating that same pattern over and over again.

Riley: I graphed the height of that pen, with respect to time. Here's what I found.



Devyn: Hey, that looks familiar!

Problem 1 *Devyn and Riley have discovered simple harmonic motion. What function did Riley plot?*

Multiple Choice:

(a) $\sin t$

(b) $\cos t$

(c) $\tan t$

Learning outcomes:

(d) $-\sin t$

(e) $-\cot t$ ✓

(f) $-\tan t$

Problem 2 *Since we're talking about trigonometric functions, we have to be very clear about our units. What units do we use to measure angles / rotation when we see an expression like* $\sin\theta$*?*

Multiple Choice:

(a) *Only degrees.*

(b) *Usually degrees, but occasionally radians.*

(c) *Occasionally degrees, but usually radians.*

(d) *Only radians.* ✓
