

Re: trigonometry $\sin(\pi - x) = \sin x$

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- *From:* Matt <matt271829-news@xxxxxxxxxxx>
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On Dec 14, 8:40 am, James Dow Allen <gm...@xxxxxxxxxxxxxxxxxxxxxxxx> wrote:

ER <ernst...@xxxxxxxx> might have writ, in news:bd7062aa-e3ee-4d11-a697-d85bcbe9c...@xx:

I have a question about the function $\sin(\pi - x) = \sin x$. It's a bit confusing.

On the left hand side you have $\sin(\pi - x)$. π is a point on the unit circle while x is a value on the x axis. How can you subtract a value on the x axis from a point on the unit circle?

Replace " x " with " θ " and your confusion disappears. The choice of " x " may have been unfortunate,

I agree that it might be more common here to use a Greek letter, especially θ , but IMO using " x " is absolutely fine. I wouldn't call it in any way "unfortunate".

but variable names tend to be somewhat arbitrary.

The other answers you received, while not "wrong", missed your point, I think. Not everyone has the same intuition; you are following the lead of the famous Francois Vieta, about whom Wikipedia writes:

"Vieta [layed] down the principle that quantities occurring in an equation ought to be homogeneous, all of them lines, or surfaces, or solids, or supersolids—an equation between mere numbers being inadmissible. During the centuries that have elapsed between Vieta's day and the present, several changes of opinion have taken place on this subject."

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Angles should have been included in this sentence about Vieta's principle. While "changes of opinion have taken place", responders who insist that π and x are "just numbers" might wish to repent and admit the viability of alternate views!

This issue is of historical and philosophical interest, but I think is not one that needs to overly concern a modern student who is just trying to understand $\sin(\pi - x) = \sin x$.