

Re: $-2\cos(x) - \sin(x)$ simplification?

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- *From:* matt271829-news@xxxxxxxxxxxx
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crocostimpy@xxxxxxxx wrote:

Can it be shown that

$$-2\cos(x) - \sin(x)$$

can be simplified to

$$[3\cos^2(x)+1]^{(1/2)} ?$$

...I'm trying to prove that

$$(-2M/r^3)\cos(x) + (-M/r^3)\sin(x) = (M/r^3)[[3\cos^2(x)+1]^{(1/2)}]$$

I've gotten so far as $(M/r^3)(-2\cos(x) - \sin(x))$, but am stuck there.

But that should mean that $[3\cos^2(x)+1]^{(1/2)}$ should equal $(-2\cos(x) - \sin(x))$.

No, $-2\cos(x) - \sin(x) = (3\cos^2(x) + 1 + 2\sin(2x))^{(1/2)}$ (provided you take the appropriate sign for the square root).