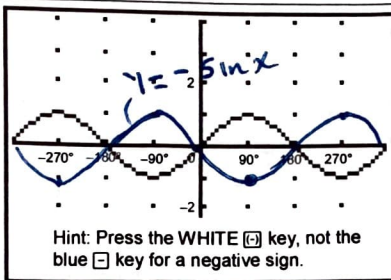
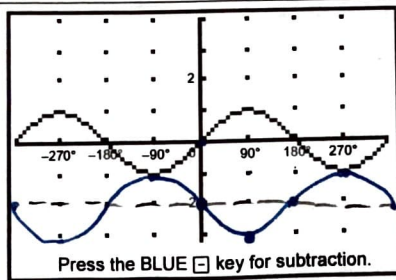


Date:

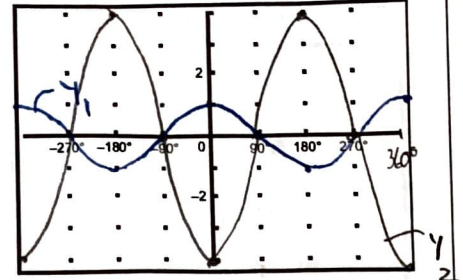
Use the same setup as the **Shifting & Stretching Discovery** sheet. Then press $\boxed{Y=}$ and enter $Y_1 = \sin(x)$



1. $Y_2 = -\sin(x)$

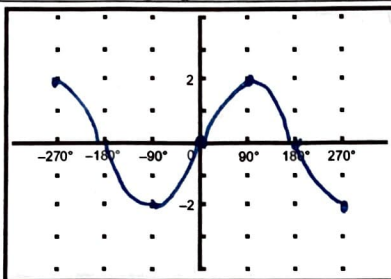


2. $Y_2 = -\sin(x) - 2$

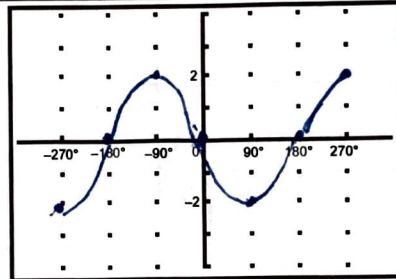


3. $Y_1 = \cos(x)$ $Y_2 = -4\cos(x)$

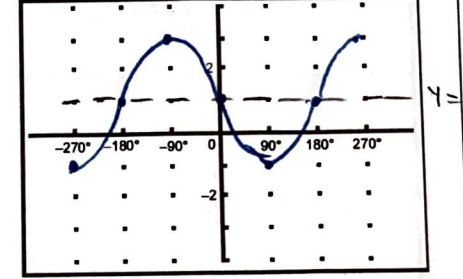
Sketch each graph below *then* use the TI-83 to check each sketch *before* attempting the next one.



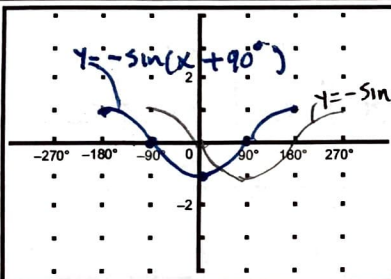
4. $y = 2 \sin x$



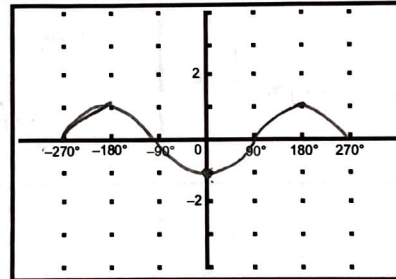
5. $y = -2 \sin x$



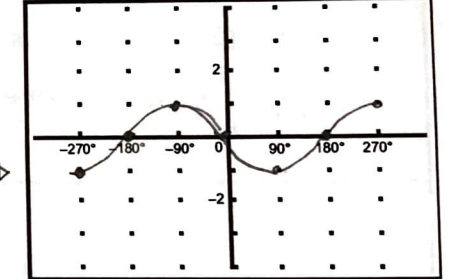
6. $y = -\sin x + 1$



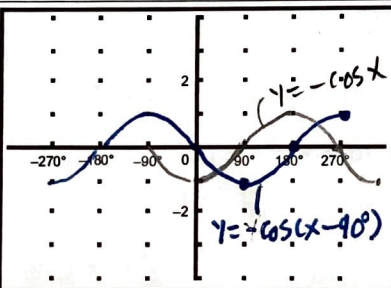
7. $y = -\sin(x + 90^\circ)$



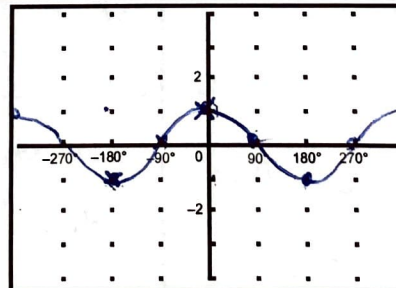
8. $y = -\cos x$



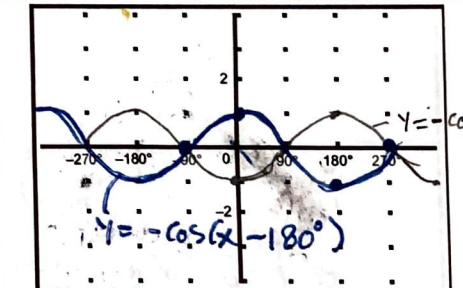
9. $y = -\cos(x + 270^\circ)$



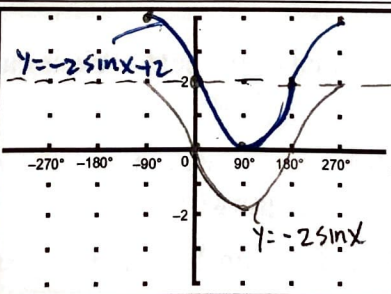
10. $y = -\cos(x - 90^\circ)$



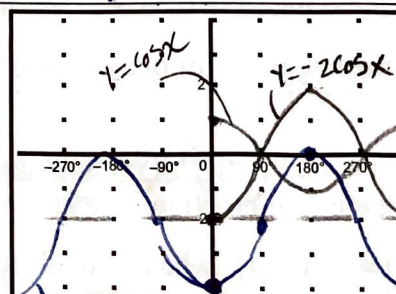
11. $y = -\cos(x + 180^\circ) = \cos x$



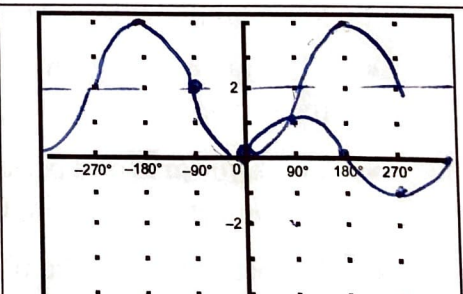
12. $y = -\cos(x - 180^\circ)$



13. $y = -2 \sin x + 2$



14. $y = -2 \cos x - 2$



15. $y = -2 \sin(x + 90^\circ) + 2$

first, graph $y = -2 \sin x$,
RHHS Mathematics Department
and, translate it up 2 units

① $y = -2 \cos x$
118 47
② $y = -2 \cos x - 2$

a = 2, reflection in x-axis
P = 90 degrees (L)
v.T = 2 up