Derivatives of Sine and Cosine

Using the Creating the Derivative mathlet, select the (default) function $f(x) = \sin(x)$ from the pull-down menu in the lower left corner of the screen. Do not check any of the boxes.

Move the slider or use the >> button to display the graph of the sine function.

a) For approximately what values of x is the slope of $f(x) = \sin(x)$ equal to 0?

b) At approximately what values of x is the slope of $f(x) = \sin(x)$ largest?

c) For each of the values you listed in (b), is the slope positive or negative?

d) Use the information you have collected to sketch the graph of $f'(x)$, the derivative of the sine function.

e) Check the box next to the red $f'(x)$ to check your work.

28/8/25

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a) $-\frac{3\pi}{2}, -\frac{\pi}{2}, \frac{\pi}{2}, \frac{3\pi}{2}$

b) $-2\pi, -\pi, 0, \pi, 2\pi$

c) $+, -, +, -, +$

d)