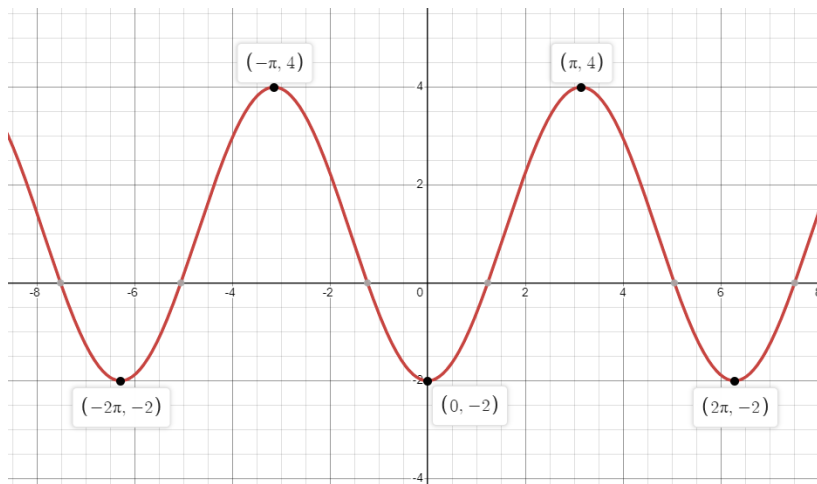


Instructions: Show all work. Use exact answers unless specifically asked to round. Answer all parts of each question.

1. Sketch the graph of $f(x) = 2 \sin(\pi x) - 3$ using key points.

2. Find an expression for the function shown in the graph below. Values of some key points are noted.



3. Sketch the graph of $g(x) = \tan\left(x - \frac{\pi}{4}\right)$ using key points. State the domain and range. Then give an equation of its inverse. What the domain and range of the inverse?