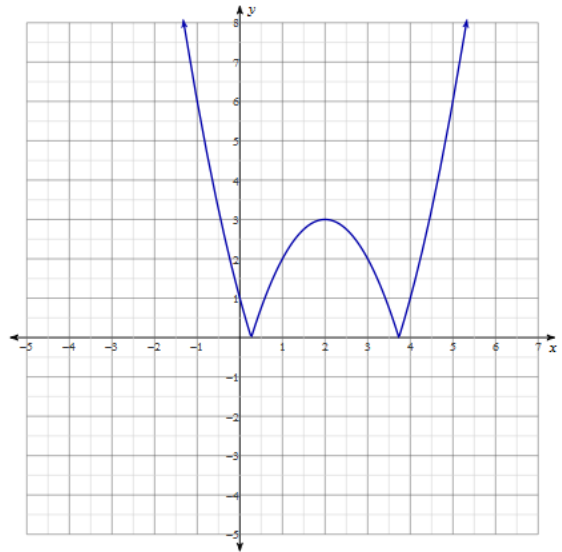


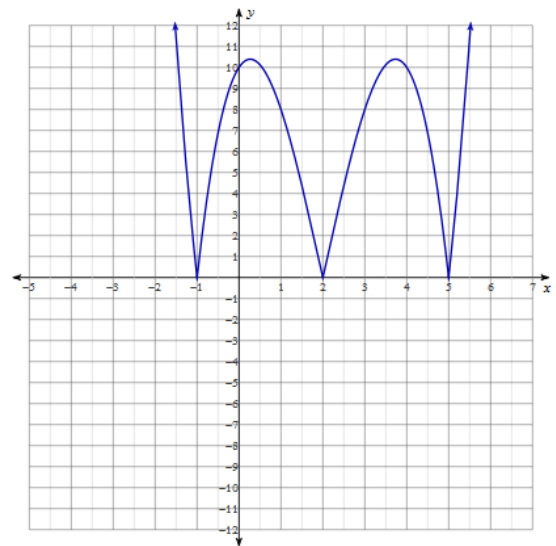
Function Toolkit #2 – Composition of Functions (Solutions)

Use the Function Toolkit to sketch a graph of each of the following functions on the grid provided. Show all work, calculations, and tables where appropriate. State the domain, range, x- and y-intercepts when requested.

1) $f(x) = |(x-2)^2 - 3|$



2) $y = |x^3 - 6x^2 + 3x + 10|$



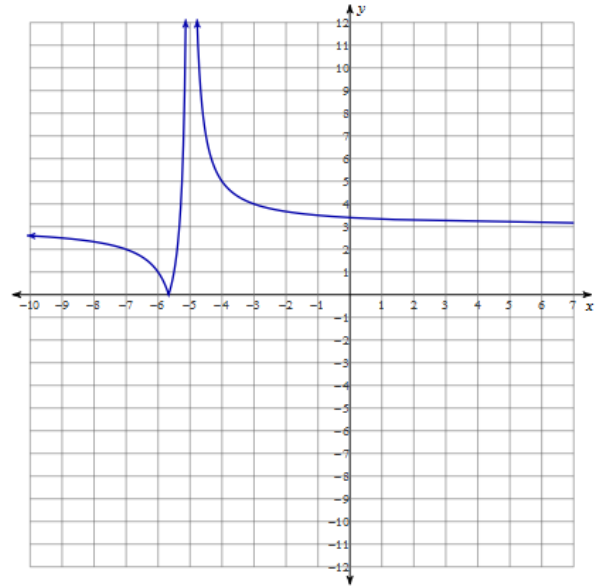
x- intercepts: _____

y-intercept: _____

3) $f(x) = \left| \frac{2}{x+5} + 3 \right|$

domain: _____

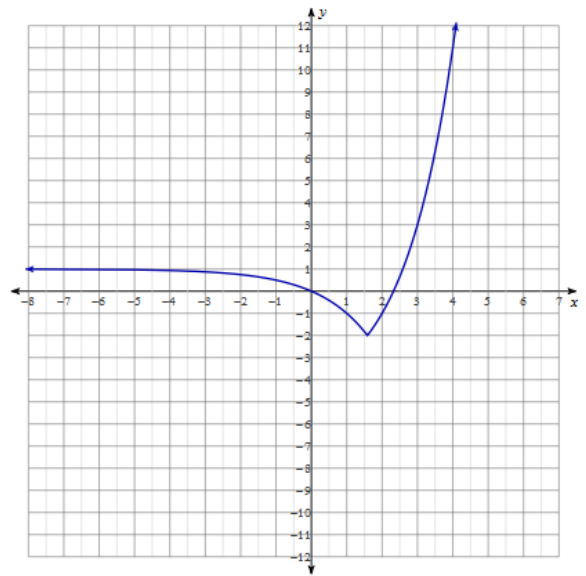
range: _____



4) $f(x) = |2^x - 3| - 2$

domain: _____

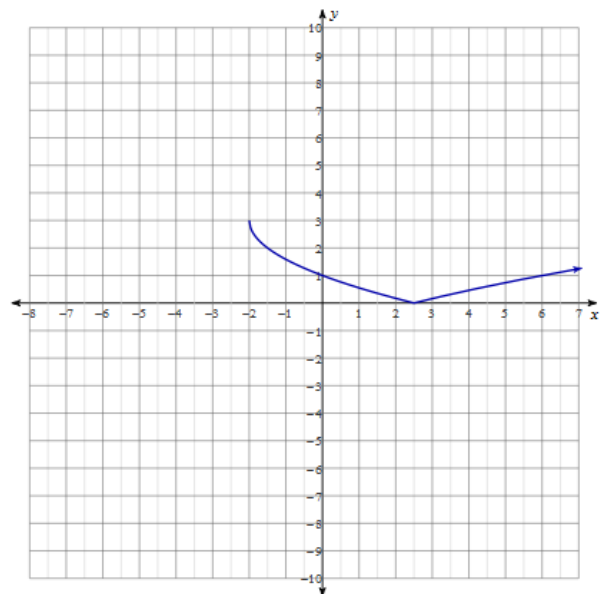
range: _____



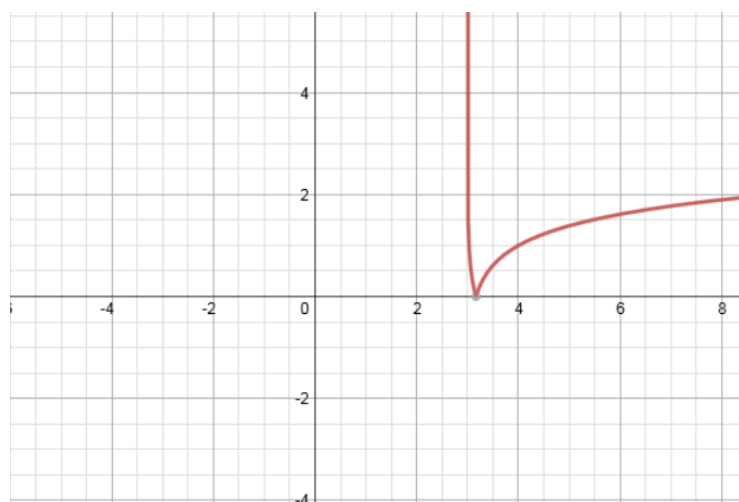
5) $y = |\sqrt{2x+4} - 3|$

domain: _____

range: _____



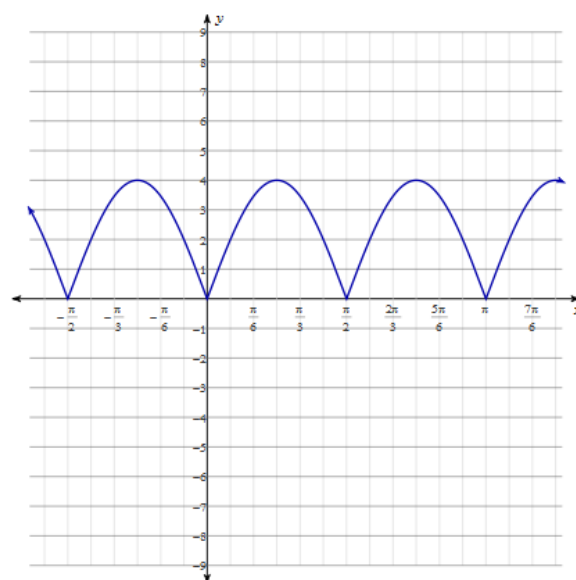
6) $f(x) = |\log_6(x-3) + 1|$



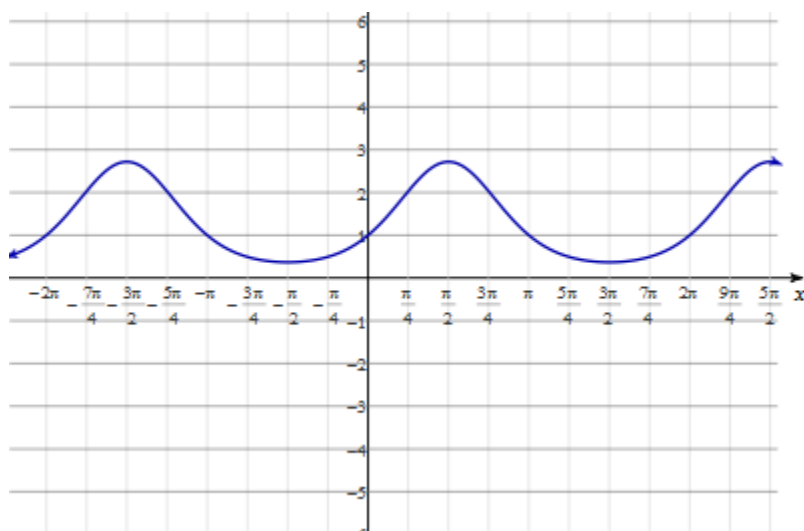
x-intercept: _____

y-intercept: _____

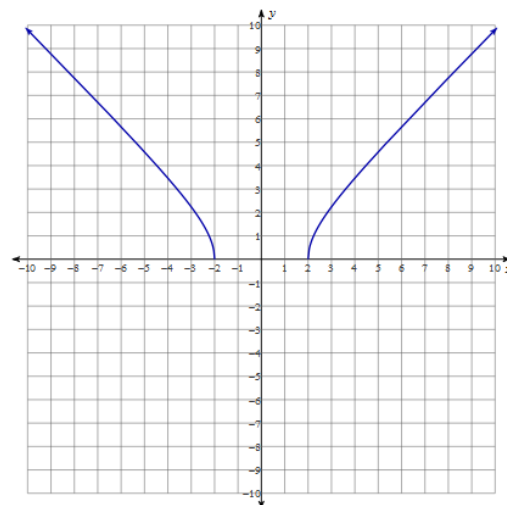
7) $f(x) = |4\sin 2x|$



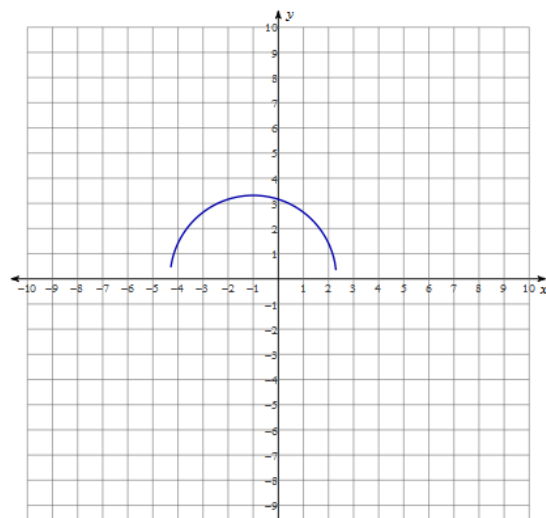
8) $f(x) = e^{\sin x}$



9) $y = \sqrt{x^2 - 4}$



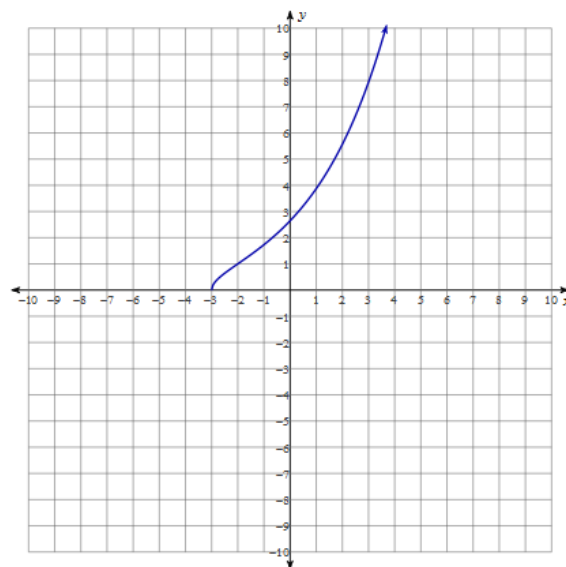
10) $y = \sqrt{10 - 2x - x^2}$



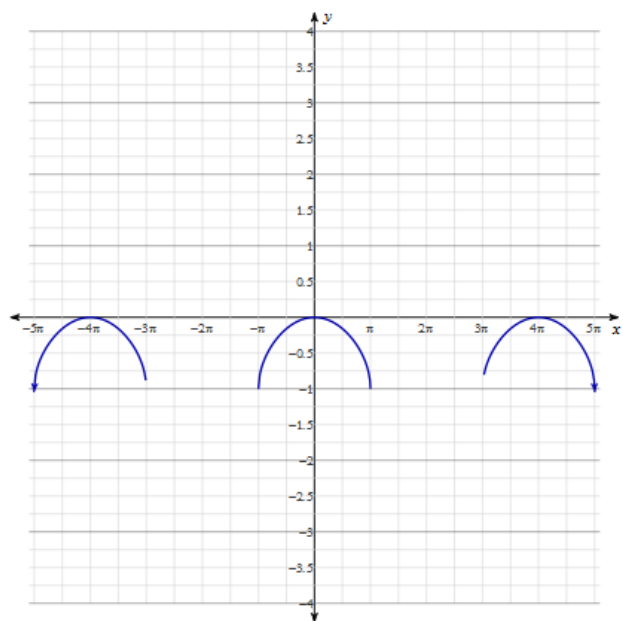
x-intercepts: _____

y-intercept: _____

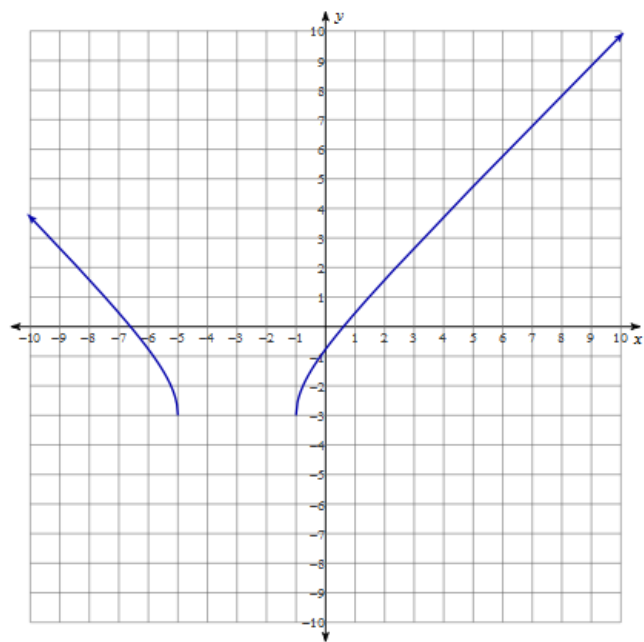
11) $f(x) = \sqrt{2^{x+3} - 1}$



12) $y = \sqrt{\cos\left(\frac{1}{2}x\right)} - 1$



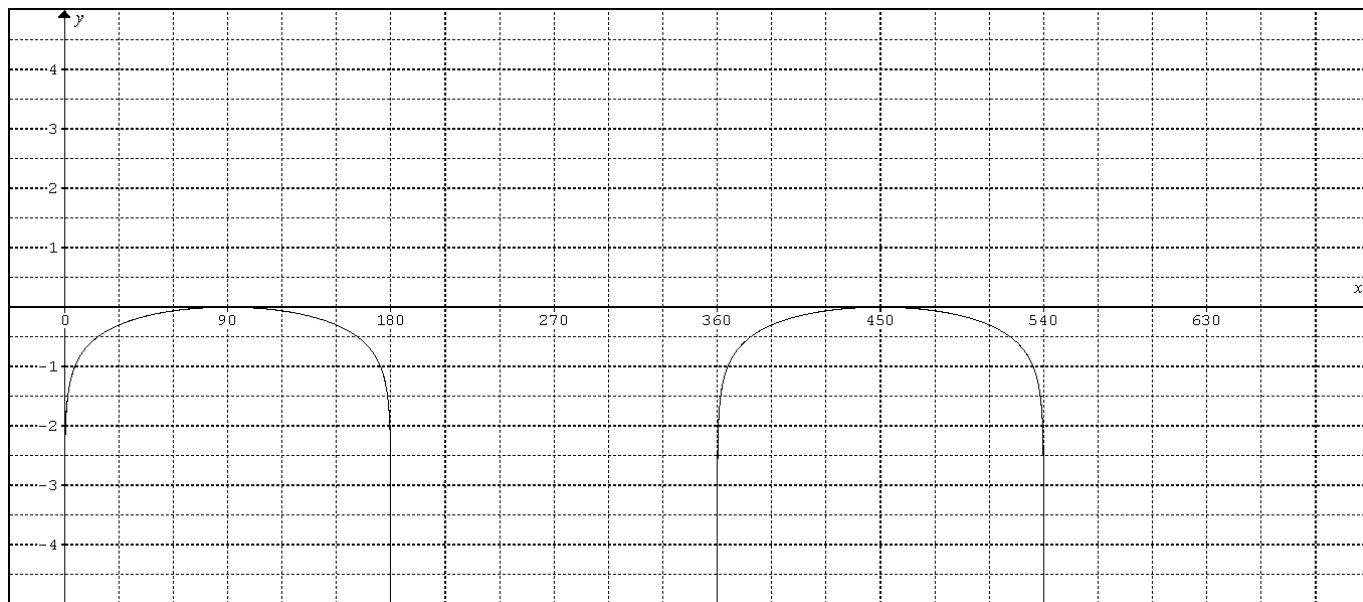
13) $y = \sqrt{x^2 + 6x + 5} - 3$



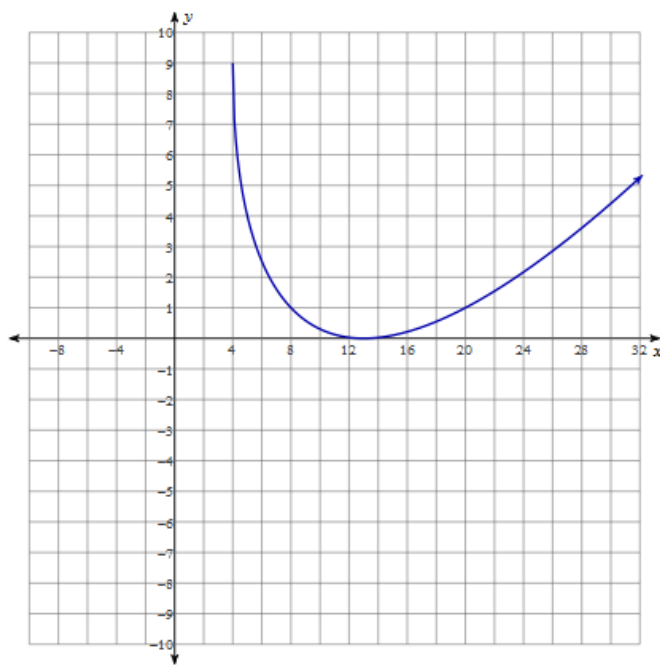
domain: _____

range: _____

14) $y = \log(\sin x)$



15) $f(x) = (3 - \sqrt{x-4})^2$



x-intercept: _____

y-intercept: _____