

CA12 Functions Assignment

Name: _____

1. Sketch $y = 2^x + 3$

2. Sketch $y = -e^{2x}$

3. Sketch $y = \ln(x + 2)$

4. Sketch $y = x^3 - 5x^2 + 8x - 4$

5. Sketch $y = \frac{2x+3}{x-4}$

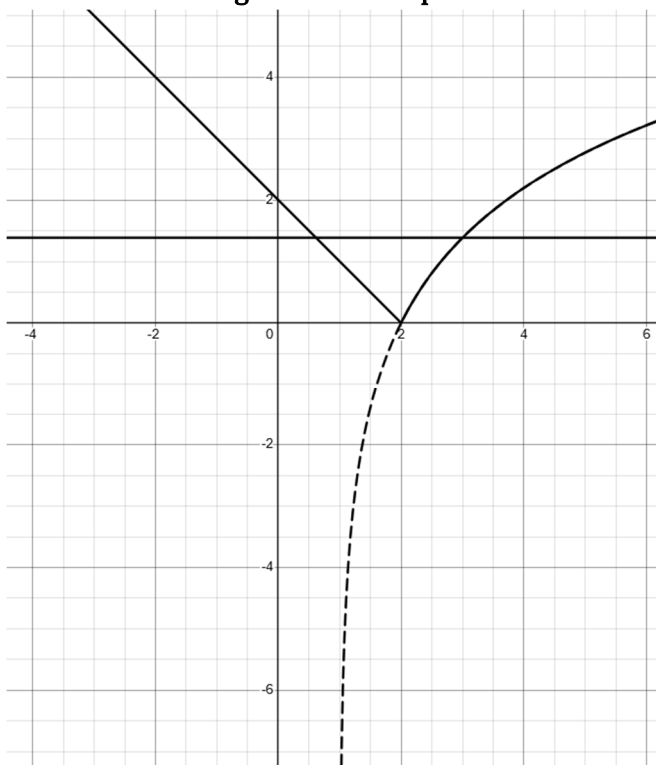
6. Sketch $y = \frac{x^2+2x}{x^2-2x-8}$

7. $y = -\cos(\pi x) - 2$

8. $y = -\tan\left(\frac{x}{2}\right)$

9. $f(x) = \begin{cases} x^2 - 2x - 8 & x < 4 \\ 2 & x = 4 \\ 2\sqrt{x-4} & x > 4 \end{cases}$

10. Write the following function as a piecewise function:



11. Sketch $y = -\sin^{-1}x$

12. Sketch $y = 2 \arccos x$

13. $f(x) = \arctan x$

a. Sketch

b. Evaluate $f(0)$

14. $f(x) = \begin{cases} 2(x+1)^2 - 8 & x < 1 \\ -4x + k & x \geq 1 \end{cases}$

Find k so f is continuous.

15. Sketch the following graph:

a. $y = \sqrt{25 - x^2}$

b. $y = -\sqrt{7 - x^2}$

16. Sketch

a. $y = |x|$

b. $y = \frac{|x|}{x}$

c. $y = \frac{x}{|x|}$

d. $y = \frac{|x-3|}{x-3}$

17. Sketch $x = \sin y$