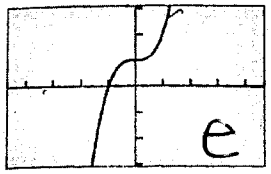
Part 1: For #1-12, each graph is a slight variation on the graph of one of the 12 basic functions. Match the graph to one of the 12 functions (a)-(l) and then support your answer by checking the graph on your calculator. All graphs shown are in the window [-4.7, 4.7] by [-3.1, 3.1].

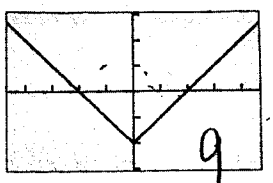
(a) $y = -\sin x$ **(b)** $y = \cos x + 1$ **(c)** $y = e^x - 2$

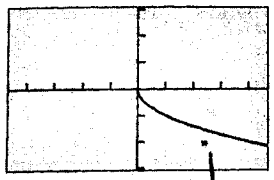
(d) $y = (x + 2)^3$ **(e)** $y = x^3 + 1$ **(f)** $y = (x - 1)^2$

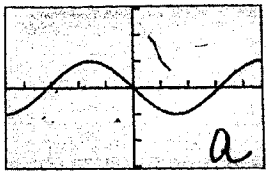
(g) $y = |x| - 2$ **(h)** $y = -1/x$ **(i)** $y = -x$

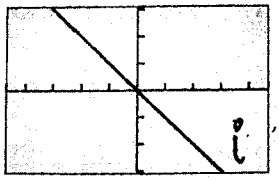
(j) $y = -\sqrt{x}$ **(k)** $y = \text{int}(x + 1)$ **(l)** $y = 2 - 4/(1+e^{-x})$

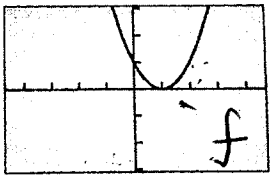
1. 

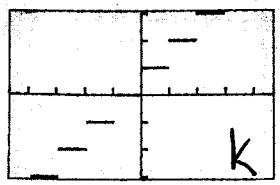
2. 

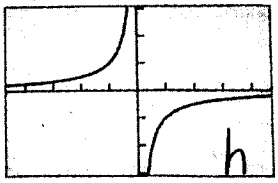
3. 

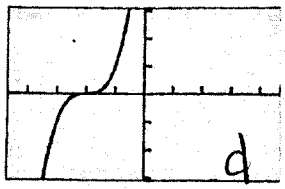
4. 

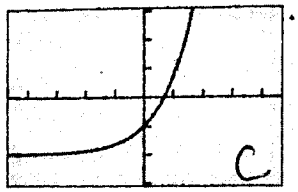
5. 

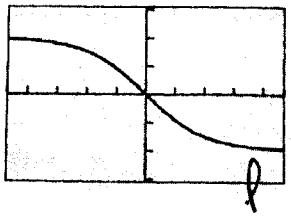
6. 

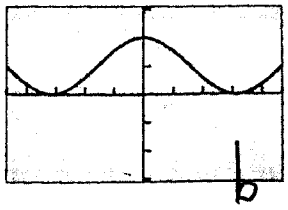
7. 

8. 

9. 

10. 

11. 

12. 

Part 2: For #13-18, identify which of exercises 1-12 display functions that fit the description given.

13. The function whose domain excludes zero. #8
14. The function whose domain consists of all nonnegative real numbers. #3
15. The two functions that have at least one point of discontinuity. #7 & #8
16. The function that is not a *continuous function*. #7
17. The six functions that are bounded below. #2, 4, 6, 10, 11, 12
18. The four functions that are bounded above. #3, 4, 11, 12

Part 3: For #19-24, identify which of the 12 basic functions fit the description given.

19. The four functions that are odd. $y=x$ $y=x^3$ $y=\frac{1}{x}$ $y=\sin x$
20. The six functions that are increasing on their entire domains. $y=x$ $y=x^3$ $y=\sqrt{x}$ $y=e^x$ $y=\ln x$ $y=\frac{1}{1+e^{-x}}$
21. The three functions that are decreasing on the interval $(-\infty, 0)$. $y=x^2$ $y=\frac{1}{x}$ $y=|x|$
22. The three functions with infinitely many local extrema. $y=\sin x$ $y=\cos x$
23. The three functions with no zeros. $y=\frac{1}{x}$ $y=e^x$ $y=\frac{1}{1+e^{-x}}$
24. The three functions with range {all real numbers}. $y=x$ $y=x^3$ $y=\ln x$ $y=[x]$