

1. Give the name and equation of four functions whose domain and range are the same.

2. Give the name and equation of two functions whose similar domains differs only for the reason one is inclusive and the other is not inclusive.

3. Give the name and equation for three functions that are always increasing.

4. Give the range of $y = -2|x| - 3$ _____

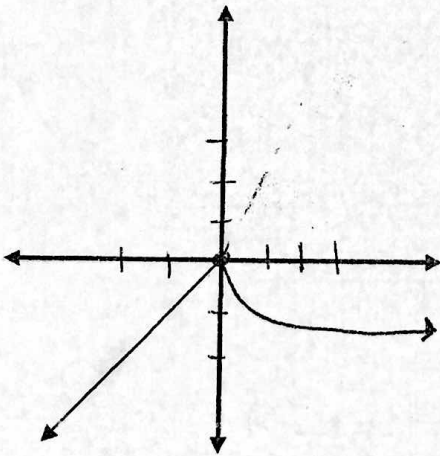
5. Give the domain $y = \ln(x-2)$ _____

6. Give the decreasing interval for $y = -x^2$ _____

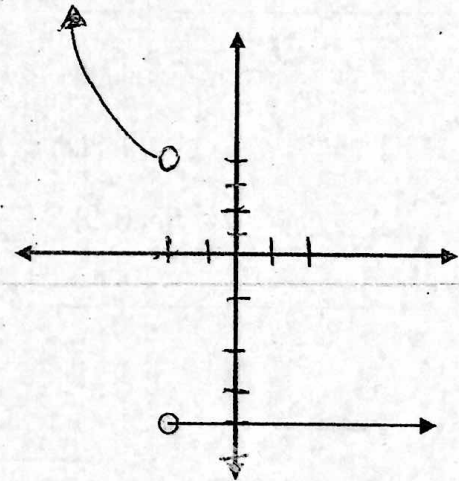
7. Give the domain of the square root function that has been shifted left 4 and up 2 _____

8. Give the range of $y = 2\sin(2x) - 5$ _____

9.



10.

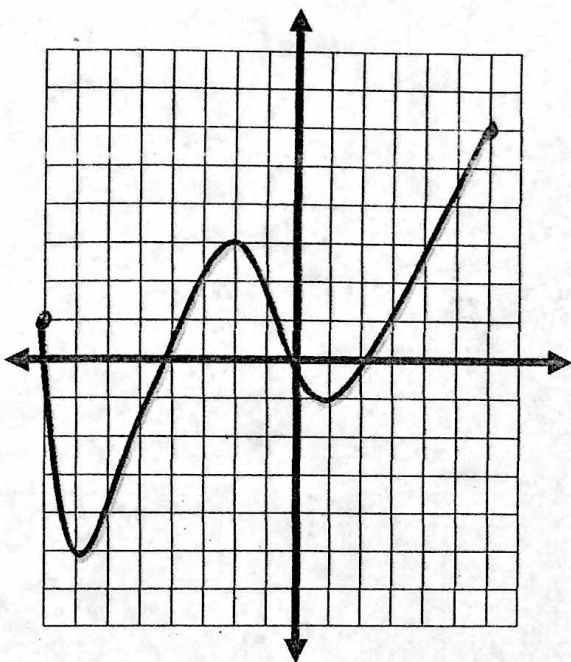


Give $f(x)$ for the piece wise function.

$$f(x) = \left\{ \begin{array}{l} \\ \\ \end{array} \right\}$$

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11. $f(-2)$ is positive or negative? _____
12. Where is/are the local max values? _____
13. How many values of x does $f(x) = 1$? _____
14. Give the intervals of increase _____
15. What is the local minimum(s)? _____
16. Give the interval of decrease _____
17. Domain _____ Range _____

Given: $f(x) = x^2 + 1$ $g(x) = \sqrt{x - 1}$ $h(x) = 3x$

18. Find $(h + f)(-2)$ _____
19. $(f/g)(5)$ _____
20. $(h-g)(10)$ _____
21. $(hg)(x) =$ _____
22. $(h-f)(x)$ _____

Given: $f(x) = 1 - x^2$ $g(x) = 1/x$ $h(x) = \sqrt{x}$

23. $h(f(3)) =$ _____
24. $f(g(1/2)) =$ _____
25. $g(f(h(16))) =$ _____
26. $f(g(x)) =$ _____
27. $g(f(h(x))) =$ _____

28. If $h(g(f(x))) = \sqrt[3]{x^2 + 4}$, then $h(x) =$ _____ $g(x) =$ _____ $f(x) =$ _____

29. If $f(x) = 2x - 3$, then $f(x+h) - f(x) =$ _____

30. If $f(x) = 4 - x^2$, then $f(x+h) - f(x) =$ _____

31. If $f(x) = x^3$, then $\frac{f(x+h) - f(x)}{h} =$ _____

32. If $f(x) = 3x^2 + x$, then $\frac{f(x+h) - f(x)}{h} =$ _____