

$$f(x) = x^2 - 4x + 1 \quad g(x) = 2x + 1 \quad h(x) = 3|4 - 2x| + 4$$

For # 1 – 15, find the following regarding the functions listed above

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|----------------------------|------------------------------------|-------------------------------------|
| 1) $h(3)$ | 2) $f(-4)$ | 3) $f(c + 2)$ |
| 4) The domain of $f(x)$ | 5) The range of $h(x)$ | 6) $(f + g)(x)$ and D |
| 7) $(g - f)(x)$ and D | 8) $(f \cdot g)(x)$ and D | 9) $(f/g)(x)$ and D |
| 10) $(f \circ g)(x)$ and D | 11) $g(f(2))$ | 12) The inverse of $f(x)$ |
| 13) The inverse of $g(x)$ | 14) Difference quotient for $f(x)$ | 15) List transformations for $h(x)$ |

For the following quadratics find the: Vertex, Axis of Symmetry, x-intercepts and y-intercepts

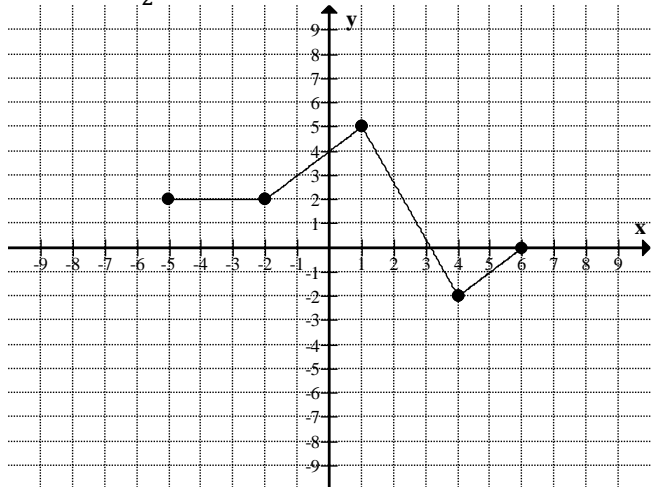
- | | | |
|-------------------------|-----------------------------|---------------------------|
| 16) $y = x^2 - 4x - 12$ | 17) $f(x) = 2(x - 4)^2 - 5$ | 18) $y = 2(x + 3)(x - 5)$ |
|-------------------------|-----------------------------|---------------------------|

For the piecewise function $f(x) = \begin{cases} 2x + 3 & x < 1 \\ x^2 - 2 & 1 \leq x \leq 4 \\ |2 - x| & x > 4 \end{cases}$ find the following:

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|------------|-------------|------------|------------------|
| 19) $f(4)$ | 20) $f(-1)$ | 21) $f(6)$ | 22) graph $f(x)$ |
|------------|-------------|------------|------------------|

Perform the proper transformations on the graph:

13) $y = \frac{1}{2}f(x - 4) + 2$



22) graph it here

