

Algebra 3 Assignment # 6

Piecewise Functions

Sketch a graph of each of the following please.

$$(1) \quad y = \begin{cases} -x - 1 & \text{if } x < 0 \\ x + 1 & \text{if } x \geq 0 \end{cases}$$

$$(2) \quad y = \begin{cases} 2x + 4 & \text{if } x < -2 \\ \frac{1}{2}x + 3 & \text{if } x \geq -2 \end{cases}$$

$$(3) \quad y = \begin{cases} -x - 1 & \text{if } x \leq -1 \\ -|x| & \text{if } -1 < x < 1 \\ x - 2 & \text{if } x \geq 1 \end{cases}$$

$$(4) \quad y = \llbracket x + 2 \rrbracket$$

$$(5) \quad y = \llbracket x \rrbracket + 2$$

$$(6) \quad y = 2\llbracket x \rrbracket$$

$$(7) \quad y = \llbracket 2x \rrbracket$$

$$(8) \quad f(x) = 3\llbracket x \rrbracket + 1, \quad g(x) = \sqrt{x + 5}, \quad h(x) = x^2 + 2. \text{ Find each of the following.}$$

$$(a) \quad f(g(3))$$

$$(b) \quad f(h(-2))$$

$$(c) \quad f(g(h(-5)))$$

$$(d) \quad h\left(g\left(f\left(-\frac{3}{2}\right)\right)\right)$$

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Answers

(8) (a) 7

(b) 19

(c) 16

(d) 2