

SHEET # 231 : PIECEWISE FUNCTIONS

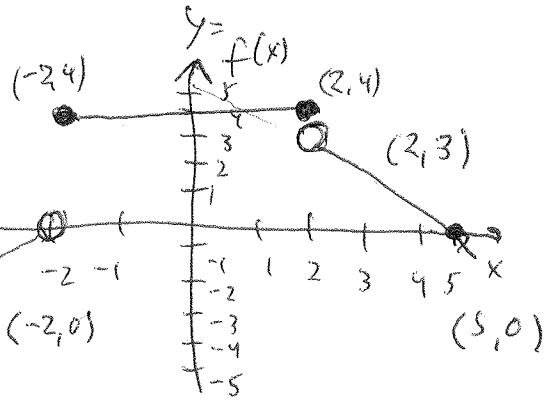
NAME: \_\_\_\_\_

**KEY**

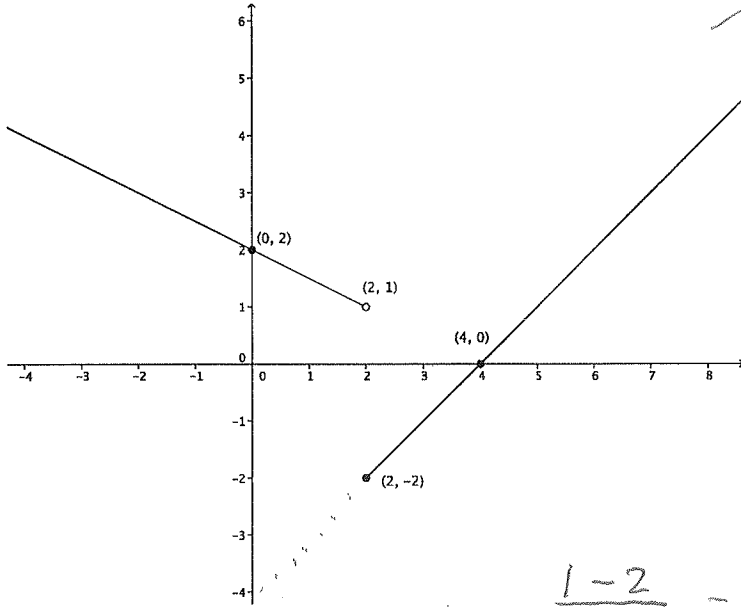
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Problem 1. Sketch the graph of

$$f(x) = \begin{cases} x+2 & \text{if } x < -2 \\ 4 & \text{if } -2 \leq x \leq 1 \\ -x+5 & \text{if } x > 1 \end{cases}$$



Problem 2. Write an equation for the following graph:



$$m = \frac{1-2}{2-0} = -\frac{1}{2}$$

$$x < 2 \quad = \quad y - 2 = \left(-\frac{1}{2}\right)(x - 0)$$

$$y = -\frac{1}{2}x + 2$$

$$x \geq 2 \quad = \quad m = \frac{0 - (-2)}{4 - 2} = \frac{2}{2} = 1$$

$$y - 0 = (1)(x - 4)$$

$$y = x - 4$$

$$f(x) = \begin{cases} -\frac{x}{2} + 2 & \text{for } x < 2 \\ 0 & \text{for } 2 \leq x \leq 4 \\ x - 4 & \text{for } x > 4 \end{cases}$$