12.04 Worksheet

Use the Simplify, Substitute, and Solve Strategy (S-S-S) to evaluate each of the following Piecewise functions.

1. Given the following definition for $f(x)$, evaluate $f(25)$.

$$f(x) = \begin{cases} f(x-4)+2 & \text{if } x > 10 \\ -7 & \text{if } x \leq 10 \end{cases}$$

2. Given the following definition for $f(x)$, evaluate $f(30)$.

$$f(x) = \begin{cases} f(x/12+5)-3 & \text{if } x > 25 \\ 20 & \text{if } x \leq 25 \end{cases}$$

3. Given the following definition for $f(x)$, evaluate $f(500)$.

$$f(x) = \begin{cases} f(x/12+5)-3 & \text{if } x > 25 \\ 20 & \text{if } x \leq 25 \end{cases}$$

4. Given the following definition for $f(x)$, evaluate $f(500)$.

$$f(x) = \begin{cases} f(x*2)-4 & \text{if } x \leq 20 \\ -100 & \text{if } x > 20 \end{cases}$$

5. Create and evaluate your own Piecewise function.