

1. Evaluate the following for $f(x) = \begin{cases} x^2 + 5 & \text{if } x \leq -2 \\ 5x + 6 & \text{if } -2 < x < 4 \\ 2x^3 + 5 & \text{if } x \geq 4 \end{cases}$

$$f(-2) = (-2)^2 + 5 = 9$$

$$f(6) = 2(6)^3 + 5 = 437$$

2. Use $g(x) = -0.05x^2 + 2.1x - 142.35$ to answer the following.

Find the x-value of the vertex using $x = \frac{-b}{2a}$

Vertex: (21, -120.3)

maximum: -120.3

minimum= none

range: $y \leq -120.3$