The vertex of the first parabola is $(8, 0)$, so an equation is $y = a(x-8)^2+0$. Since the point $(9, 2)$ is on the
parabola, we'll substitute 9 for x and 2 for y to find a. $2 = a(9-8)^2 \Rightarrow a = 2$, so the equation is $f(x) = 2(x-8)^2$.

The y-intercept of the second parabola is $(0, 1)$, so an equation is $y = ax^2+bx+1$. Since the points $(-2, 2)$ and $(1, -2.5)$ are on the parabola, we'll substitute -2 for x and 2 for y as well as 1 for x and -2.5 for y to obtain two equations with the unknowns a and b.

$$(-2, 2): \qquad 2 = 4a - 2b + 1 \quad \Rightarrow \quad 4a - 2b = 1 \qquad \textbf{(1)}$$

$$(1, -2.5): \qquad -2.5 = a + b + 1 \quad \Rightarrow \quad a + b = -3.5 \qquad \textbf{(2)}$$

$2 \cdot \textbf{(2)} + \textbf{(1)}$ gives us $6a = -6 \Rightarrow a = -1$. From **(2)**, $-1 + b = -3.5 \Rightarrow b = -2.5$, so the equation is $g(x) = -x^2 - 2.5x + 1$.