A) Straight line: slope $m = 100$, passes through $(0, 3200)$.

B) Parabola: opening down, $x$-intercepts at 0 and 150, vertex at $(75, 11250)$.

C)
\[
100x + 3200 = -2x^2 + 300x \\
2x^2 - 200x + 3200 = 0 \\
x^2 - 100x + 1600 = 0 \\
(x - 20)(x - 80) = 0 \\
x_{1,2} = 20, 80.
\]

D) $f(x) - g(x) = 2x^2 - 200x + 3200$ is a quadratic with a positive leading coefficient. Its minimum value is given by $y_0$, the $y$-component of the vertex. Since the $x$-component of the vertex is $x_0 = -b/2a = 50$, we have
\[
y_0 = 2(50^2 - 100 \cdot 50 + 1600) = -1800.
\]