7. Which of the following are correct calculations for difference quotient of:

$w(x) = 2x^2 + 8x + 5$

$w(x) = 2x^2 + 8x + 5$

$w(x+h) = 2(h+x)^2 + 8(h+x) + 5$

$= 2h^2 + 4hx + 8h + 2x^2 + 8x + 5$

$\dfrac{w(x+h) - w(x)}{h} = \dfrac{\left(2h^2 + 4xh + 8h + 2x^2 + 8x + 5\right) - \left(2(x+1)^2 + 8(x+1) + 5\right)}{h}$

$= \dfrac{2h^2 + 4xh + 8h}{h}$

$= \dfrac{h(2h + 4x + 8)}{h}$

$= 2h + 4x + 8$

$w(x) = 2x^2 + 8x + 5$

$w(x+h) = 2(h+x)^2 + 8(h+x) + 5$

$= 2h^2 + 4hx + 12h + 2x^2 + 12x + 15$

$\dfrac{w(x+h) - w(x)}{h} = \dfrac{\left(2h^2 + 4xh + 12h + 2x^2 + 12x + 15\right) - \left(2x^2 + 8x + 5\right)}{h}$

$= \dfrac{2h^2 + 4xh + 8h}{h}$

$= \dfrac{h(2h + 4x + 8)}{h}$

$= 2h + 4x + 8$

$w(x) = 2x^2 + 8x + 5$

$w(x+h) = 2(h+x)^2 + 8(h+x) + 5$

$= 2h^2 + 4hx + 8h + 2x^2 + 8x + 5$

$\dfrac{w(x+h) - w(x)}{h} = \dfrac{\left(2h^2 + 4xh + 8h + 2x^2 + 8x + 5\right) - \left(2x^2 + 8x + 5\right)}{h}$

$= \dfrac{2h^2 + 4xh + 8h}{h}$

$= \dfrac{h(2h + 4x + 8)}{h}$

$= 2h + 4x + 8$

$w(x) = 2x^2 + 8x + 5$

$w(x+h) = 2(h+x)^2 + 8(h+x) + 5$

$= 2h^2 + 4hx + 4h + 2x^2 + 4x - 1$

$\dfrac{w(x+h) - w(x)}{h} = \dfrac{\left(2h^2 + 4xh + 16h + 2x^2 + 16x + 29\right) - \left(2x^2 + 8x + 5\right)}{h}$

$= \dfrac{2h^2 + 4xh + 8h}{h}$

$= \dfrac{h(2h + 4(x+1) + 8)}{h}$

$= 2h + 4x + 8$

Solution