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

$a(p) = 9p^2 + p + 5$

$a(p) = 9p^2 + p + 5$

$a(p+h) = 9(h+p)^2 + h + p + 5$

$= 9h^2 + 18hp + h + 9p^2 + p + 5$

$\dfrac{a(p+h) - a(p)}{h} = \dfrac{\left(9h^2 + 18ph + h + 9p^2 + p + 5\right) - \left(9(p+1)^2 + p + 6\right)}{h}$

$= \dfrac{9h^2 + 18ph + h}{h}$

$= \dfrac{h(9h + 18p + 1)}{h}$

$= 9h + 18p + 1$

$a(p) = 9p^2 + p + 5$

$a(p+h) = 9(h+p)^2 + h + p + 5$

$= 9h^2 + 18hp + 19h + 9p^2 + 19p + 15$

$\dfrac{a(p+h) - a(p)}{h} = \dfrac{\left(9h^2 + 18ph + 19h + 9p^2 + 19p + 15\right) - \left(9p^2 + p + 5\right)}{h}$

$= \dfrac{9h^2 + 18ph + h}{h}$

$= \dfrac{h(9h + 18p + 1)}{h}$

$= 9h + 18p + 1$

$a(p) = 9p^2 + p + 5$

$a(p+h) = 9(h+p)^2 + h + p + 5$

$= 9h^2 + 18hp + h + 9p^2 + p + 5$

$\dfrac{a(p+h) - a(p)}{h} = \dfrac{\left(9h^2 + 18ph + h + 9p^2 + p + 5\right) - \left(9p^2 + p + 5\right)}{h}$

$= \dfrac{9h^2 + 18ph + h}{h}$

$= \dfrac{h(9h + 18p + 1)}{h}$

$= 9h + 18p + 1$

$a(p) = 9p^2 + p + 5$

$a(p+h) = 9(h+p)^2 + h + p + 5$

$= 9h^2 + 18hp - 17h + 9p^2 - 17p + 13$

$\dfrac{a(p+h) - a(p)}{h} = \dfrac{\left(9h^2 + 18ph + 37h + 9p^2 + 37p + 43\right) - \left(9p^2 + p + 5\right)}{h}$

$= \dfrac{9h^2 + 18ph + h}{h}$

$= \dfrac{h(9h + 18(p+1) + 1)}{h}$

$= 9h + 18p + 1$

Solution