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

$y(m) = 3m^2 + 5m + 9$

$y(m) = 3m^2 + 5m + 9$

$y(m+h) = 3(h+m)^2 + 5(h+m) + 9$

$= 3h^2 + 6hm + 5h + 3m^2 + 5m + 9$

$\frac{y(m+h) - y(m)}{h} = \frac{\left(3h^2+6mh+5h+3m^2+5m+9\right) - \left(3(m+1)^2+5(m+1)+9\right)}{h}$

$= \frac{3h^2+6mh+5h}{h}$

$= \frac{h(3h+6m+5)}{h}$

$= 3h + 6m + 5$

$y(m) = 3m^2 + 5m + 9$

$y(m+h) = 3(h+m)^2 + 5(h+m) + 9$

$= 3h^2 + 6hm + 11h + 3m^2 + 11m + 17$

$\frac{y(m+h) - y(m)}{h} = \frac{\left(3h^2+6mh+11h+3m^2+11m+17\right) - \left(3m^2+5m+9\right)}{h}$

$= \frac{3h^2+6mh+5h}{h}$

$= \frac{h(3h+6m+5)}{h}$

$= 3h + 6m + 5$

$y(m) = 3m^2 + 5m + 9$

$y(m+h) = 3(h+m)^2 + 5(h+m) + 9$

$= 3h^2 + 6hm + 5h + 3m^2 + 5m + 9$

$\frac{y(m+h) - y(m)}{h} = \frac{\left(3h^2+6mh+5h+3m^2+5m+9\right) - \left(3m^2+5m+9\right)}{h}$

$= \frac{3h^2+6mh+5h}{h}$

$= \frac{h(3h+6m+5)}{h}$

$= 3h + 6m + 5$

$y(m) = 3m^2 + 5m + 9$

$y(m+h) = 3(h+m)^2 + 5(h+m) + 9$

$= 3h^2 + 6hm - h + 3m^2 - m + 7$

$\frac{y(m+h) - y(m)}{h} = \frac{\left(3h^2+6mh+17h+3m^2+17m+31\right) - \left(3m^2+5m+9\right)}{h}$

$= \frac{3h^2+6mh+5h}{h}$

$= \frac{h(3h+6(m+1)+5)}{h}$

$= 3h + 6m + 5$

Solution