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

$u(m) = 4m^2 + 5m + 2$

$u(m) = 4m^2 + 5m + 2$

$u(m+h) = 4(h+m)^2 + 5(h+m) + 2$

$= 4h^2 + 8hm + 5h + 4m^2 + 5m + 2$

$$\frac{u(m+h)-u(m)}{h} = \frac{\left(4h^2+8mh+5h+4m^2+5m+2\right)-\left(4(m+1)^2+5(m+1)+2\right)}{h}$$

$$= \frac{4h^2+8mh+5h}{h}$$

$$= \frac{h(4h+8m+5)}{h}$$

$= 4h + 8m + 5$

$u(m) = 4m^2 + 5m + 2$

$u(m+h) = 4(h+m)^2 + 5(h+m) + 2$

$= 4h^2 + 8hm + 13h + 4m^2 + 13m + 11$

$$\frac{u(m+h)-u(m)}{h} = \frac{\left(4h^2+8mh+13h+4m^2+13m+11\right)-\left(4m^2+5m+2\right)}{h}$$

$$= \frac{4h^2+8mh+5h}{h}$$

$$= \frac{h(4h+8m+5)}{h}$$

$= 4h + 8m + 5$

$u(m) = 4m^2 + 5m + 2$

$u(m+h) = 4(h+m)^2 + 5(h+m) + 2$

$= 4h^2 + 8hm + 5h + 4m^2 + 5m + 2$

$$\frac{u(m+h)-u(m)}{h} = \frac{\left(4h^2+8mh+5h+4m^2+5m+2\right)-\left(4m^2+5m+2\right)}{h}$$

$$= \frac{4h^2+8mh+5h}{h}$$

$$= \frac{h(4h+8m+5)}{h}$$

$= 4h + 8m + 5$

$u(m) = 4m^2 + 5m + 2$

$u(m+h) = 4(h+m)^2 + 5(h+m) + 2$

$= 4h^2 + 8hm - 3h + 4m^2 - 3m + 1$

$$\frac{u(m+h)-u(m)}{h} = \frac{\left(4h^2+8mh+21h+4m^2+21m+28\right)-\left(4m^2+5m+2\right)}{h}$$

$$= \frac{4h^2+8mh+5h}{h}$$

$$= \frac{h(4h+8(m+1)+5)}{h}$$

$= 4h + 8m + 5$

Solution