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

$q(m) = 8m^2 + 4m + 1$

$q(m) = 8m^2 + 4m + 1$

$q(m+h) = 8(h+m)^2 + 4(h+m) + 1$

$= 8h^2 + 16hm + 4h + 8m^2 + 4m + 1$

$$\frac{q(m+h)-q(m)}{h} = \frac{\left(8h^2+16mh+4h+8m^2+4m+1\right)-\left(8(m+1)^2+4(m+1)+1\right)}{h}$$

$$= \frac{8h^2+16mh+4h}{h}$$

$$= \frac{h(8h+16m+4)}{h}$$

$= 8h + 16m + 4$

$q(m) = 8m^2 + 4m + 1$

$q(m+h) = 8(h+m)^2 + 4(h+m) + 1$

$= 8h^2 + 16hm + 20h + 8m^2 + 20m + 13$

$$\frac{q(m+h)-q(m)}{h} = \frac{\left(8h^2+16mh+20h+8m^2+20m+13\right)-\left(8m^2+4m+1\right)}{h}$$

$$= \frac{8h^2+16mh+4h}{h}$$

$$= \frac{h(8h+16m+4)}{h}$$

$= 8h + 16m + 4$

$q(m) = 8m^2 + 4m + 1$

$q(m+h) = 8(h+m)^2 + 4(h+m) + 1$

$= 8h^2 + 16hm + 4h + 8m^2 + 4m + 1$

$$\frac{q(m+h)-q(m)}{h} = \frac{\left(8h^2+16mh+4h+8m^2+4m+1\right)-\left(8m^2+4m+1\right)}{h}$$

$$= \frac{8h^2+16mh+4h}{h}$$

$$= \frac{h(8h+16m+4)}{h}$$

$= 8h + 16m + 4$

$q(m) = 8m^2 + 4m + 1$

$q(m+h) = 8(h+m)^2 + 4(h+m) + 1$

$= 8h^2 + 16hm - 12h + 8m^2 - 12m + 5$

$$\frac{q(m+h)-q(m)}{h} = \frac{\left(8h^2+16mh+36h+8m^2+36m+41\right)-\left(8m^2+4m+1\right)}{h}$$

$$= \frac{8h^2+16mh+4h}{h}$$

$$= \frac{h(8h+16(m+1)+4)}{h}$$

$= 8h + 16m + 4$

Solution