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

$$n(k) = 2k^2 + 7k + 3$$

$$n(k) = 2k^2 + 7k + 3$$

$$n(k+h) = 2(h+k)^2 + 7(h+k) + 3$$

$$= 2h^2 + 4hk + 7h + 2k^2 + 7k + 3$$

$$\frac{n(k+h) - n(k)}{h} = \frac{\left(2h^2+4kh+7h+2k^2+7k+3\right) - \left(2(k+1)^2+7(k+1)+3\right)}{h}$$

$$= \frac{2h^2+4kh+7h}{h}$$

$$= \frac{h(2h+4k+7)}{h}$$

$$= 2h + 4k + 7$$

$$n(k) = 2k^2 + 7k + 3$$

$$n(k+h) = 2(h+k)^2 + 7(h+k) + 3$$

$$= 2h^2 + 4hk + 11h + 2k^2 + 11k + 12$$

$$\frac{n(k+h) - n(k)}{h} = \frac{\left(2h^2+4kh+11h+2k^2+11k+12\right) - \left(2k^2+7k+3\right)}{h}$$

$$= \frac{2h^2+4kh+7h}{h}$$

$$= \frac{h(2h+4k+7)}{h}$$

$$= 2h + 4k + 7$$

$$n(k) = 2k^2 + 7k + 3$$

$$n(k+h) = 2(h+k)^2 + 7(h+k) + 3$$

$$= 2h^2 + 4hk + 7h + 2k^2 + 7k + 3$$

$$\frac{n(k+h) - n(k)}{h} = \frac{\left(2h^2+4kh+7h+2k^2+7k+3\right) - \left(2k^2+7k+3\right)}{h}$$

$$= \frac{2h^2+4kh+7h}{h}$$

$$= \frac{h(2h+4k+7)}{h}$$

$$= 2h + 4k + 7$$

$$n(k) = 2k^2 + 7k + 3$$

$$n(k+h) = 2(h+k)^2 + 7(h+k) + 3$$

$$= 2h^2 + 4hk + 3h + 2k^2 + 3k - 2$$

$$\frac{n(k+h) - n(k)}{h} = \frac{\left(2h^2+4kh+15h+2k^2+15k+25\right) - \left(2k^2+7k+3\right)}{h}$$

$$= \frac{2h^2+4kh+7h}{h}$$

$$= \frac{h(2h+4(k+1)+7)}{h}$$

$$= 2h + 4k + 7$$

Solution