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

$$y(g) = 2g^2 + 6g + 7$$

$$y(g) = 2g^2 + 6g + 7$$

$$y(g+h) = 2(g+h)^2 + 6(g+h) + 7$$

$$= 2g^2 + 4gh + 6g + 2h^2 + 6h + 7$$

$$\frac{y(g+h) - y(g)}{h} = \frac{\left(2g^2+4hg+6g+2h^2+6h+7\right) - \left(2(g+1)^2+6(g+1)+7\right)}{h}$$

$$= \frac{2h^2+4gh+6h}{h}$$

$$= \frac{h(4g+2h+6)}{h}$$

$$= 4g + 2h + 6$$

$$y(g) = 2g^2 + 6g + 7$$

$$y(g+h) = 2(g+h)^2 + 6(g+h) + 7$$

$$= 2g^2 + 4gh + 10g + 2h^2 + 10h + 15$$

$$\frac{y(g+h) - y(g)}{h} = \frac{\left(2g^2+4hg+10g+2h^2+10h+15\right) - \left(2g^2+6g+7\right)}{h}$$

$$= \frac{2h^2+4gh+6h}{h}$$

$$= \frac{h(4g+2h+6)}{h}$$

$$= 4g + 2h + 6$$

$$y(g) = 2g^2 + 6g + 7$$

$$y(g+h) = 2(g+h)^2 + 6(g+h) + 7$$

$$= 2g^2 + 4gh + 6g + 2h^2 + 6h + 7$$

$$\frac{y(g+h) - y(g)}{h} = \frac{\left(2g^2+4hg+6g+2h^2+6h+7\right) - \left(2g^2+6g+7\right)}{h}$$

$$= \frac{2h^2+4gh+6h}{h}$$

$$= \frac{h(4g+2h+6)}{h}$$

$$= 4g + 2h + 6$$

$$y(g) = 2g^2 + 6g + 7$$

$$y(g+h) = 2(g+h)^2 + 6(g+h) + 7$$

$$= 2g^2 + 4gh + 2g + 2h^2 + 2h + 3$$

$$\frac{y(g+h) - y(g)}{h} = \frac{\left(2g^2+4hg+14g+2h^2+14h+27\right) - \left(2g^2+6g+7\right)}{h}$$

$$= \frac{2h^2+4gh+6h}{h}$$

$$= \frac{h(4(g+1)+2h+6)}{h}$$

$$= 4g + 2h + 6$$

Solution