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

$v(b) = b^2 + 2b + 7$

$v(b) = b^2 + 2b + 7$

$v(b+h) = (b+h)^2 + 2(b+h) + 7$

$= b^2 + 2bh + 2b + h^2 + 2h + 7$

$$\frac{v(b+h) - v(b)}{h} = \frac{\left(b^2+2hb+2b+h^2+2h+7\right) - \left((b+1)^2+2(b+1)+7\right)}{h}$$

$$= \frac{h^2+2bh+2h}{h}$$

$$= \frac{h(2b+h+2)}{h}$$

$= 2b + h + 2$

$v(b) = b^2 + 2b + 7$

$v(b+h) = (b+h)^2 + 2(b+h) + 7$

$= b^2 + 2bh + 4b + h^2 + 4h + 10$

$$\frac{v(b+h) - v(b)}{h} = \frac{\left(b^2+2hb+4b+h^2+4h+10\right) - \left(b^2+2b+7\right)}{h}$$

$$= \frac{h^2+2bh+2h}{h}$$

$$= \frac{h(2b+h+2)}{h}$$

$= 2b + h + 2$

$v(b) = b^2 + 2b + 7$

$v(b+h) = (b+h)^2 + 2(b+h) + 7$

$= b^2 + 2bh + 2b + h^2 + 2h + 7$

$$\frac{v(b+h) - v(b)}{h} = \frac{\left(b^2+2hb+2b+h^2+2h+7\right) - \left(b^2+2b+7\right)}{h}$$

$$= \frac{h^2+2bh+2h}{h}$$

$$= \frac{h(2b+h+2)}{h}$$

$= 2b + h + 2$

$v(b) = b^2 + 2b + 7$

$v(b+h) = (b+h)^2 + 2(b+h) + 7$

$= b^2 + 2bh + h^2 + 6$

$$\frac{v(b+h) - v(b)}{h} = \frac{\left(b^2+2hb+6b+h^2+6h+15\right) - \left(b^2+2b+7\right)}{h}$$

$$= \frac{h^2+2bh+2h}{h}$$

$$= \frac{h(2(b+1)+h+2)}{h}$$

$= 2b + h + 2$

Solution