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

$$q(u) = 6u^2 + 5u + 6$$

$$q(u) = 6u^2 + 5u + 6$$

$$q(u+h) = 6(h+u)^2 + 5(h+u) + 6$$

$$= 6h^2 + 12hu + 5h + 6u^2 + 5u + 6$$

$$\frac{q(u+h) - q(u)}{h} = \frac{\left(6h^2+12uh+5h+6u^2+5u+6\right) - \left(6(u+1)^2+5(u+1)+6\right)}{h}$$

$$= \frac{6h^2+12uh+5h}{h}$$

$$= \frac{h(6h+12u+5)}{h}$$

$$= 6h + 12u + 5$$

$$q(u) = 6u^2 + 5u + 6$$

$$q(u+h) = 6(h+u)^2 + 5(h+u) + 6$$

$$= 6h^2 + 12hu + 17h + 6u^2 + 17u + 17$$

$$\frac{q(u+h) - q(u)}{h} = \frac{\left(6h^2+12uh+17h+6u^2+17u+17\right) - \left(6u^2+5u+6\right)}{h}$$

$$= \frac{6h^2+12uh+5h}{h}$$

$$= \frac{h(6h+12u+5)}{h}$$

$$= 6h + 12u + 5$$

$$q(u) = 6u^2 + 5u + 6$$

$$q(u+h) = 6(h+u)^2 + 5(h+u) + 6$$

$$= 6h^2 + 12hu + 5h + 6u^2 + 5u + 6$$

$$\frac{q(u+h) - q(u)}{h} = \frac{\left(6h^2+12uh+5h+6u^2+5u+6\right) - \left(6u^2+5u+6\right)}{h}$$

$$= \frac{6h^2+12uh+5h}{h}$$

$$= \frac{h(6h+12u+5)}{h}$$

$$= 6h + 12u + 5$$

$$q(u) = 6u^2 + 5u + 6$$

$$q(u+h) = 6(h+u)^2 + 5(h+u) + 6$$

$$= 6h^2 + 12hu - 7h + 6u^2 - 7u + 7$$

$$\frac{q(u+h) - q(u)}{h} = \frac{\left(6h^2+12uh+29h+6u^2+29u+40\right) - \left(6u^2+5u+6\right)}{h}$$

$$= \frac{6h^2+12uh+5h}{h}$$

$$= \frac{h(6h+12(u+1)+5)}{h}$$

$$= 6h + 12u + 5$$

**Solution**