

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

$$u(b) = 2b^2 + 7b + 4$$

$$u(b) = 2b^2 + 7b + 4$$

$$u(b+h) = 2(b+h)^2 + 7(b+h) + 4$$

$$= 2b^2 + 4bh + 7b + 2h^2 + 7h + 4$$

$$\frac{u(b+h) - u(b)}{h} = \frac{(2b^2 + 4bh + 7b + 2h^2 + 7h + 4) - (2(b+1)^2 + 7(b+1) + 4)}{h}$$

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

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

$$= 4b + 2h + 7$$

$$u(b) = 2b^2 + 7b + 4$$

$$u(b+h) = 2(b+h)^2 + 7(b+h) + 4$$

$$= 2b^2 + 4bh + 11b + 2h^2 + 11h + 13$$

$$\frac{u(b+h) - u(b)}{h} = \frac{(2b^2 + 4bh + 11b + 2h^2 + 11h + 13) - (2b^2 + 7b + 4)}{h}$$

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

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

$$= 4b + 2h + 7$$

$$u(b) = 2b^2 + 7b + 4$$

$$u(b+h) = 2(b+h)^2 + 7(b+h) + 4$$

$$= 2b^2 + 4bh + 7b + 2h^2 + 7h + 4$$

$$\frac{u(b+h) - u(b)}{h} = \frac{(2b^2 + 4bh + 7b + 2h^2 + 7h + 4) - (2b^2 + 7b + 4)}{h}$$

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

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

$$= 4b + 2h + 7$$

$$u(b) = 2b^2 + 7b + 4$$

$$u(b+h) = 2(b+h)^2 + 7(b+h) + 4$$

$$= 2b^2 + 4bh + 3b + 2h^2 + 3h - 1$$

$$\frac{u(b+h) - u(b)}{h} = \frac{(2b^2 + 4bh + 15b + 2h^2 + 15h + 26) - (2b^2 + 7b + 4)}{h}$$

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

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

$$= 4b + 2h + 7$$

**Solution**