

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

$$y(b) = 9b^2 + 9b + 3$$

$$y(b) = 9b^2 + 9b + 3$$

$$y(b+h) = 9(b+h)^2 + 9(b+h) + 3$$

$$= 9b^2 + 18bh + 9b + 9h^2 + 9h + 3$$

$$\frac{y(b+h) - y(b)}{h} = \frac{(9b^2 + 18bh + 9b + 9h^2 + 9h + 3) - (9b^2 + 9b + 3)}{h}$$

$$= \frac{9h^2 + 18bh + 9h}{h}$$

$$= \frac{h(18b + 9h + 9)}{h}$$

$$= 18b + 9h + 9$$

$$y(b) = 9b^2 + 9b + 3$$

$$y(b+h) = 9(b+h)^2 + 9(b+h) + 3$$

$$= 9b^2 + 18bh + 27b + 9h^2 + 27h + 21$$

$$\frac{y(b+h) - y(b)}{h} = \frac{(9b^2 + 18bh + 27b + 9h^2 + 27h + 21) - (9b^2 + 9b + 3)}{h}$$

$$= \frac{9h^2 + 18bh + 9h}{h}$$

$$= \frac{h(18b + 9h + 9)}{h}$$

$$= 18b + 9h + 9$$

$$y(b) = 9b^2 + 9b + 3$$

$$y(b+h) = 9(b+h)^2 + 9(b+h) + 3$$

$$= 9b^2 + 18bh + 9b + 9h^2 + 9h + 3$$

$$\frac{y(b+h) - y(b)}{h} = \frac{(9b^2 + 18bh + 9b + 9h^2 + 9h + 3) - (9b^2 + 9b + 3)}{h}$$

$$= \frac{9h^2 + 18bh + 9h}{h}$$

$$= \frac{h(18b + 9h + 9)}{h}$$

$$= 18b + 9h + 9$$

$$y(b) = 9b^2 + 9b + 3$$

$$y(b+h) = 9(b+h)^2 + 9(b+h) + 3$$

$$= 9b^2 + 18bh - 9b + 9h^2 - 9h + 3$$

$$\frac{y(b+h) - y(b)}{h} = \frac{(9b^2 + 18bh + 45b + 9h^2 + 45h + 57) - (9b^2 + 9b + 3)}{h}$$

$$= \frac{9h^2 + 18bh + 9h}{h}$$

$$= \frac{h(18(b+1) + 9h + 9)}{h}$$

$$= 18b + 9h + 9$$

Solution