5. Which of the following are correct calculations for difference quotient of:
$$v(f) = 9f^2 + 3f + 7$$

$$v(f) = 9f^2 + 3f + 7$$
$$v(f+h) = 9(f+h)^2 + 3(f+h) + 7$$
$$= 9f^2 + 18fh + 3f + 9h^2 + 3h + 7$$
$$\frac{v(f+h) - v(f)}{h} = \frac{\left(9f^2 + 18hf + 3f + 9h^2 + 3h + 7\right) - \left(9(f+1)^2 + 3(f+1) + 7\right)}{h}$$
$$= \frac{9h^2 + 18fh + 3h}{h}$$
$$= \frac{h(18f + 9h + 3)}{h}$$
$$= 18f + 9h + 3$$

$$v(f) = 9f^2 + 3f + 7$$
$$v(f+h) = 9(f+h)^2 + 3(f+h) + 7$$
$$= 9f^2 + 18fh + 21f + 9h^2 + 21h + 19$$
$$\frac{v(f+h) - v(f)}{h} = \frac{\left(9f^2 + 18hf + 21f + 9h^2 + 21h + 19\right) - \left(9f^2 + 3f + 7\right)}{h}$$
$$= \frac{9h^2 + 18fh + 3h}{h}$$
$$= \frac{h(18f + 9h + 3)}{h}$$
$$= 18f + 9h + 3$$

$$v(f) = 9f^2 + 3f + 7$$
$$v(f+h) = 9(f+h)^2 + 3(f+h) + 7$$
$$= 9f^2 + 18fh + 3f + 9h^2 + 3h + 7$$
$$\frac{v(f+h) - v(f)}{h} = \frac{\left(9f^2 + 18hf + 3f + 9h^2 + 3h + 7\right) - \left(9f^2 + 3f + 7\right)}{h}$$
$$= \frac{9h^2 + 18fh + 3h}{h}$$
$$= \frac{h(18f + 9h + 3)}{h}$$
$$= 18f + 9h + 3$$

$$v(f) = 9f^2 + 3f + 7$$
$$v(f+h) = 9(f+h)^2 + 3(f+h) + 7$$
$$= 9f^2 + 18fh - 15f + 9h^2 - 15h + 13$$
$$\frac{v(f+h) - v(f)}{h} = \frac{\left(9f^2 + 18hf + 39f + 9h^2 + 39h + 49\right) - \left(9f^2 + 3f + 7\right)}{h}$$
$$= \frac{9h^2 + 18fh + 3h}{h}$$
$$= \frac{h(18(f+1) + 9h + 3)}{h}$$
$$= 18f + 9h + 3$$

Solution