

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

$$k(s) = 9s^2 + 4s + 3$$

$$k(s) = 9s^2 + 4s + 3$$

$$k(s+h) = 9(h+s)^2 + 4(h+s) + 3$$

$$= 9h^2 + 18hs + 4h + 9s^2 + 4s + 3$$

$$\frac{k(s+h) - k(s)}{h} = \frac{(9h^2 + 18hs + 4h + 9s^2 + 4s + 3) - (9s^2 + 4s + 3)}{h}$$

$$= \frac{9h^2 + 18hs + 4h}{h}$$

$$= \frac{h(9h + 18s + 4)}{h}$$

$$= 9h + 18s + 4$$

$$k(s) = 9s^2 + 4s + 3$$

$$k(s+h) = 9(h+s)^2 + 4(h+s) + 3$$

$$= 9h^2 + 18hs + 22h + 9s^2 + 22s + 16$$

$$\frac{k(s+h) - k(s)}{h} = \frac{(9h^2 + 18hs + 22h + 9s^2 + 22s + 16) - (9s^2 + 4s + 3)}{h}$$

$$= \frac{9h^2 + 18hs + 4h}{h}$$

$$= \frac{h(9h + 18s + 4)}{h}$$

$$= 9h + 18s + 4$$

$$k(s) = 9s^2 + 4s + 3$$

$$k(s+h) = 9(h+s)^2 + 4(h+s) + 3$$

$$= 9h^2 + 18hs + 4h + 9s^2 + 4s + 3$$

$$\frac{k(s+h) - k(s)}{h} = \frac{(9h^2 + 18hs + 4h + 9s^2 + 4s + 3) - (9s^2 + 4s + 3)}{h}$$

$$= \frac{9h^2 + 18hs + 4h}{h}$$

$$= \frac{h(9h + 18s + 4)}{h}$$

$$= 9h + 18s + 4$$

$$k(s) = 9s^2 + 4s + 3$$

$$k(s+h) = 9(h+s)^2 + 4(h+s) + 3$$

$$= 9h^2 + 18hs - 14h + 9s^2 - 14s + 8$$

$$\frac{k(s+h) - k(s)}{h} = \frac{(9h^2 + 18hs - 14h + 9s^2 - 14s + 8) - (9s^2 + 4s + 3)}{h}$$

$$= \frac{9h^2 + 18hs - 14h}{h}$$

$$= \frac{h(9h + 18s - 14)}{h}$$

$$= 9h + 18s - 14$$

**Solution**