

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

$$k(c) = c^2 + 6c + 3$$

$$k(c) = c^2 + 6c + 3$$

$$k(c+h) = (c+h)^2 + 6(c+h) + 3$$

$$= c^2 + 2ch + 6c + h^2 + 6h + 3$$

$$\frac{k(c+h) - k(c)}{h} = \frac{(c^2 + 2ch + 6c + h^2 + 6h + 3) - (c^2 + 6c + 3)}{h}$$

$$= \frac{h^2 + 2ch + 6h}{h}$$

$$= \frac{h(2c + h + 6)}{h}$$

$$= 2c + h + 6$$

$$k(c) = c^2 + 6c + 3$$

$$k(c+h) = (c+h)^2 + 6(c+h) + 3$$

$$= c^2 + 2ch + 8c + h^2 + 8h + 10$$

$$\frac{k(c+h) - k(c)}{h} = \frac{(c^2 + 2ch + 8c + h^2 + 8h + 10) - (c^2 + 6c + 3)}{h}$$

$$= \frac{h^2 + 2ch + 6h}{h}$$

$$= \frac{h(2c + h + 6)}{h}$$

$$= 2c + h + 6$$

$$k(c) = c^2 + 6c + 3$$

$$k(c+h) = (c+h)^2 + 6(c+h) + 3$$

$$= c^2 + 2ch + 6c + h^2 + 6h + 3$$

$$\frac{k(c+h) - k(c)}{h} = \frac{(c^2 + 2ch + 6c + h^2 + 6h + 3) - (c^2 + 6c + 3)}{h}$$

$$= \frac{h^2 + 2ch + 6h}{h}$$

$$= \frac{h(2c + h + 6)}{h}$$

$$= 2c + h + 6$$

$$k(c) = c^2 + 6c + 3$$

$$k(c+h) = (c+h)^2 + 6(c+h) + 3$$

$$= c^2 + 2ch + 4c + h^2 + 4h - 2$$

$$\frac{k(c+h) - k(c)}{h} = \frac{(c^2 + 2ch + 10c + h^2 + 10h + 19) - (c^2 + 6c + 3)}{h}$$

$$= \frac{h^2 + 2ch + 6h}{h}$$

$$= \frac{h(2(c+1) + h + 6)}{h}$$

$$= 2c + h + 6$$

Solution