

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

$$s(d) = d^2 + 6d + 7$$

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$$s(d+h) = (d+h)^2 + 6(d+h) + 7$$

$$= d^2 + 2dh + 6d + h^2 + 6h + 7$$

$$\frac{s(d+h) - s(d)}{h} = \frac{(d^2 + 2dh + 6d + h^2 + 6h + 7) - (d^2 + 6d + 7)}{h}$$

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

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

$$= 2d + h + 6$$

$$s(d) = d^2 + 6d + 7$$

$$s(d+h) = (d+h)^2 + 6(d+h) + 7$$

$$= d^2 + 2dh + 8d + h^2 + 8h + 14$$

$$\frac{s(d+h) - s(d)}{h} = \frac{(d^2 + 2dh + 8d + h^2 + 8h + 14) - (d^2 + 6d + 7)}{h}$$

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

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

$$= 2d + h + 6$$

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

$$= 2d + h + 6$$

$$s(d) = d^2 + 6d + 7$$

$$s(d+h) = (d+h)^2 + 6(d+h) + 7$$

$$= d^2 + 2dh + 4d + h^2 + 4h + 2$$

$$\frac{s(d+h) - s(d)}{h} = \frac{(d^2 + 2dh + 10d + h^2 + 10h + 23) - (d^2 + 6d + 7)}{h}$$

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

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

$$= 2d + h + 6$$

Solution