

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

$$s(g) = g^2 + g + 7$$

$$s(g) = g^2 + g + 7$$

$$s(g+h) = (g+h)^2 + g + h + 7$$

$$= g^2 + 2gh + g + h^2 + h + 7$$

$$\frac{s(g+h) - s(g)}{h} = \frac{(g^2 + 2gh + g + h^2 + h + 7) - (g^2 + g + 7)}{h}$$

$$= \frac{h^2 + 2gh + h}{h}$$

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

$$= 2g + h + 1$$

$$s(g) = g^2 + g + 7$$

$$s(g+h) = (g+h)^2 + g + h + 7$$

$$= g^2 + 2gh + 3g + h^2 + 3h + 9$$

$$\frac{s(g+h) - s(g)}{h} = \frac{(g^2 + 2gh + 3g + h^2 + 3h + 9) - (g^2 + g + 7)}{h}$$

$$= \frac{h^2 + 2gh + h}{h}$$

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

$$= 2g + h + 1$$

$$s(g) = g^2 + g + 7$$

$$s(g+h) = (g+h)^2 + g + h + 7$$

$$= g^2 + 2gh + g + h^2 + h + 7$$

$$\frac{s(g+h) - s(g)}{h} = \frac{(g^2 + 2gh + g + h^2 + h + 7) - (g^2 + g + 7)}{h}$$

$$= \frac{h^2 + 2gh + h}{h}$$

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

$$= 2g + h + 1$$

$$s(g) = g^2 + g + 7$$

$$s(g+h) = (g+h)^2 + g + h + 7$$

$$= g^2 + 2gh - g + h^2 - h + 7$$

$$\frac{s(g+h) - s(g)}{h} = \frac{(g^2 + 2gh + 5g + h^2 + 5h + 13) - (g^2 + g + 7)}{h}$$

$$= \frac{h^2 + 2gh + h}{h}$$

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

$$= 2g + h + 1$$

Solution