

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

$$a(u) = 9u^2 + 7u + 7$$

$$a(u) = 9u^2 + 7u + 7$$

$$a(u+h) = 9(h+u)^2 + 7(h+u) + 7$$

$$= 9h^2 + 18hu + 7h + 9u^2 + 7u + 7$$

$$\frac{a(u+h) - a(u)}{h} = \frac{(9h^2 + 18uh + 7h + 9u^2 + 7u + 7) - (9u^2 + 7u + 7)}{h}$$

$$= \frac{9h^2 + 18uh + 7h}{h}$$

$$= \frac{h(9h + 18u + 7)}{h}$$

$$= 9h + 18u + 7$$

$$a(u) = 9u^2 + 7u + 7$$

$$a(u+h) = 9(h+u)^2 + 7(h+u) + 7$$

$$= 9h^2 + 18hu + 25h + 9u^2 + 25u + 23$$

$$\frac{a(u+h) - a(u)}{h} = \frac{(9h^2 + 18uh + 25h + 9u^2 + 25u + 23) - (9u^2 + 7u + 7)}{h}$$

$$= \frac{9h^2 + 18uh + 7h}{h}$$

$$= \frac{h(9h + 18u + 7)}{h}$$

$$= 9h + 18u + 7$$

$$a(u) = 9u^2 + 7u + 7$$

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$$\frac{a(u+h) - a(u)}{h} = \frac{(9h^2 + 18uh + 7h + 9u^2 + 7u + 7) - (9u^2 + 7u + 7)}{h}$$

$$= \frac{9h^2 + 18uh + 7h}{h}$$

$$= \frac{h(9h + 18u + 7)}{h}$$

$$= 9h + 18u + 7$$

$$a(u) = 9u^2 + 7u + 7$$

$$a(u+h) = 9(h+u)^2 + 7(h+u) + 7$$

$$= 9h^2 + 18hu - 11h + 9u^2 - 11u + 9$$

$$\frac{a(u+h) - a(u)}{h} = \frac{(9h^2 + 18uh + 43h + 9u^2 + 43u + 57) - (9u^2 + 7u + 7)}{h}$$

$$= \frac{9h^2 + 18uh + 7h}{h}$$

$$= \frac{h(9h + 18u + 7)}{h}$$

$$= 9h + 18u + 7$$

**Solution**