

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

$$r(x) = 9x^2 + 5x + 8$$

$$r(x) = 9x^2 + 5x + 8$$

$$r(x+h) = 9(h+x)^2 + 5(h+x) + 8$$

$$= 9h^2 + 18hx + 5h + 9x^2 + 5x + 8$$

$$\frac{r(x+h) - r(x)}{h} = \frac{(9h^2 + 18hx + 5h + 9x^2 + 5x + 8) - (9x^2 + 5x + 8)}{h}$$

$$= \frac{9h^2 + 18hx + 5h}{h}$$

$$= \frac{h(9h + 18x + 5)}{h}$$

$$= 9h + 18x + 5$$

$$r(x) = 9x^2 + 5x + 8$$

$$r(x+h) = 9(h+x)^2 + 5(h+x) + 8$$

$$= 9h^2 + 18hx + 23h + 9x^2 + 23x + 22$$

$$\frac{r(x+h) - r(x)}{h} = \frac{(9h^2 + 18hx + 23h + 9x^2 + 23x + 22) - (9x^2 + 5x + 8)}{h}$$

$$= \frac{9h^2 + 18hx + 5h}{h}$$

$$= \frac{h(9h + 18x + 5)}{h}$$

$$= 9h + 18x + 5$$

$$r(x) = 9x^2 + 5x + 8$$

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$$\frac{r(x+h) - r(x)}{h} = \frac{(9h^2 + 18hx + 5h + 9x^2 + 5x + 8) - (9x^2 + 5x + 8)}{h}$$

$$= \frac{9h^2 + 18hx + 5h}{h}$$

$$= \frac{h(9h + 18x + 5)}{h}$$

$$= 9h + 18x + 5$$

$$r(x) = 9x^2 + 5x + 8$$

$$r(x+h) = 9(h+x)^2 + 5(h+x) + 8$$

$$= 9h^2 + 18hx - 13h + 9x^2 - 13x + 12$$

$$\frac{r(x+h) - r(x)}{h} = \frac{(9h^2 + 18hx + 41h + 9x^2 + 41x + 54) - (9x^2 + 5x + 8)}{h}$$

$$= \frac{9h^2 + 18hx + 5h}{h}$$

$$= \frac{h(9h + 18(x+1) + 5)}{h}$$

$$= 9h + 18x + 5$$

Solution