difference quotient of:  $n(a) = 6 a^2 + 9 a + 8$   $n(a) = 6 a^2 + 9 a + 8$   $n(a+h) = 6 (a+h)^2 + 9 (a+h) + 8$   $= 6 a^2 + 12 a h + 9 a + 6 h^2 + 9 h + 8$   $\frac{n(a+h) - n(a)}{h} = \frac{\left(6 a^2 + 12 h a + 9 a + 6 h^2 + 9 h + 8\right) - \left(6 (a+1)^2 + 9 (a+1) + 8\right)}{h}$ 

6. Which of the following are correct calculations for

$$\begin{split} &n\left(a\right)=6\ a^{2}+9\ a+8\\ &n\left(a+h\right)=6\ \left(a+h\right)^{2}+9\ \left(a+h\right)+8\\ &=6\ a^{2}+12\ a\ h+21\ a+6\ h^{2}+21\ h+23\\ &\frac{n\left(a+h\right)-n\left(a\right)}{h}=\frac{\left(6\ a^{2}+12\ h\ a+21\ a+6\ h^{2}+21\ h+23\right)-\left(6\ a^{2}+9\ a+8\right)}{h}\\ &=\frac{6\ h^{2}+12\ a\ h+9\ h}{h}\\ &=\frac{h\left(12\ a+6\ h+9\right)}{h}\\ &=12\ a+6\ h+9 \end{split}$$

 $= \frac{6 \text{ h}^2 + 12 \text{ a h} + 9 \text{ h}}{1}$ 

\_ <u>h (12</u> a+6 h+9)

=12 a + 6 h + 9

$$\begin{array}{l} n\left(a\right) = 6\ a^2 + 9\ a + 8 \\ n\left(a + h\right) = 6\ \left(a + h\right)^2 + 9\ \left(a + h\right) + 8 \\ = 6\ a^2 + 12\ a\ h + 9\ a + 6\ h^2 + 9\ h + 8 \\ \frac{n\left(a + h\right) - n\left(a\right)}{h} = \frac{\left(6\ a^2 + 12\ h\ a + 9\ a + 6\ h^2 + 9\ h + 8\right) - \left(6\ a^2 + 9\ a + 8\right)}{h} \\ = \frac{6\ h^2 + 12\ a\ h + 9\ h}{h} \\ = \frac{h\left(12\ a + 6\ h + 9\right)}{h} \\ = 12\ a + 6\ h + 9 \end{array}$$

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\begin{split} &n\left(a\right)=6\ a^{2}+9\ a+8\\ &n\left(a+h\right)=6\ \left(a+h\right)^{2}+9\ \left(a+h\right)+8\\ &=6\ a^{2}+12\ a\ h-3\ a+6\ h^{2}-3\ h+5\\ &\frac{n\left(a+h\right)-n\left(a\right)}{h}=\frac{\left(6\ a^{2}+12\ h\ a+33\ a+6\ h^{2}+33\ h+50\right)-\left(6\ a^{2}+9\ a+8\right)}{h}\\ &=\frac{6\ h^{2}+12\ a\ h+9\ h}{h}\\ &=\frac{h\left(12\ \left(a+1\right)+6\ h+9\right)}{h}\\ &=12\ a+6\ h+9 \end{split}
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## Solution