6. Which of the following are correct calculations for difference quotient of: $s(v) = 5v^2 + 7v + 7$ $s(v) = 5v^2 + 7v + 7$ $s(v+h) = 5(h+v)^2 + 7(h+v) + 7$

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\begin{split} &s\left(v+h\right)=5\;\left(h+v\right)^{2}+7\;\left(h+v\right)+7\\ &=5\;h^{2}+10\;h\;v+7\;h+5\;v^{2}+7\;v+7\\ &\frac{s\left(v+h\right)-s\left(v\right)}{h}=\frac{\left(5\;h^{2}+10\;v\;h+7\;h+5\;v^{2}+7\;v+7\right)-\left(5\;\left(v+1\right)^{2}+7\;\left(v+1\right)+7\right)}{h}\\ &=\frac{5\;h^{2}+10\;v\;h+7\;h}{h}\\ &=\frac{h\;\left(5\;h+10\;v+7\right)}{h}\\ &=5\;h+10\;v+7 \end{split}
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\begin{split} s\left(v\right) &= 5 \ v^2 + 7 \ v + 7 \\ s\left(v + h\right) &= 5 \ \left(h + v\right)^2 + 7 \ \left(h + v\right) + 7 \\ &= 5 \ h^2 + 10 \ h \ v + 17 \ h + 5 \ v^2 + 17 \ v + 19 \\ &\frac{s\left(v + h\right) - s\left(v\right)}{h} = \frac{\left(5 \ h^2 + 10 \ v \ h + 17 \ h + 5 \ v^2 + 17 \ v + 19\right) - \left(5 \ v^2 + 7 \ v + 7\right)}{h} \\ &= \frac{5 \ h^2 + 10 \ v \ h + 7 \ h}{h} \\ &= \frac{h \left(5 \ h + 10 \ v + 7\right)}{h} \\ &= 5 \ h + 10 \ v + 7 \end{split}
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\begin{split} s &(v) = 5 \ v^2 + 7 \ v + 7 \\ s &(v+h) = 5 \ (h+v)^2 + 7 \ (h+v) + 7 \\ = 5 \ h^2 + 10 \ h \ v + 7 \ h + 5 \ v^2 + 7 \ v + 7 \\ \frac{s \ (v+h) - s \ (v)}{h} &= \frac{\left(5 \ h^2 + 10 \ v \ h + 7 \ h + 5 \ v^2 + 7 \ v + 7\right) - \left(5 \ v^2 + 7 \ v + 7\right)}{h} \\ &= \frac{5 \ h^2 + 10 \ v \ h + 7 \ h}{h} \\ &= \frac{h \ (5 \ h + 10 \ v + 7)}{h} \\ = 5 \ h + 10 \ v + 7 \end{split}
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\begin{split} s &(v) = 5 \ v^2 + 7 \ v + 7 \\ s &(v+h) = 5 \ (h+v)^2 + 7 \ (h+v) + 7 \\ = 5 \ h^2 + 10 \ h \ v - 3 \ h + 5 \ v^2 - 3 \ v + 5 \\ \frac{s (v+h) - s (v)}{h} &= \frac{\left(5 \ h^2 + 10 \ v \ h + 27 \ h + 5 \ v^2 + 27 \ v + 41\right) - \left(5 \ v^2 + 7 \ v + 7\right)}{h} \\ &= \frac{5 \ h^2 + 10 \ v \ h + 7 \ h}{h} \\ &= \frac{h (5 \ h + 10 \ (v+1) + 7)}{h} \\ &= 5 \ h + 10 \ v + 7 \end{split}
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Solution