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

$t(k) = k^2 + 9k + 1$

$t(k) = k^2 + 9k + 1$

$t(k+h) = (h+k)^2 + 9(h+k) + 1$

$= h^2 + 2hk + 9h + k^2 + 9k + 1$

$\frac{t(k+h) - t(k)}{h} = \frac{\left(h^2 + 2kh + 9h + k^2 + 9k + 1\right) - \left((k+1)^2 + 9(k+1) + 1\right)}{h}$

$= \frac{h^2 + 2kh + 9h}{h}$

$= \frac{h(h + 2k + 9)}{h}$

$= h + 2k + 9$

$t(k) = k^2 + 9k + 1$

$t(k+h) = (h+k)^2 + 9(h+k) + 1$

$= h^2 + 2hk + 11h + k^2 + 11k + 11$

$\frac{t(k+h) - t(k)}{h} = \frac{\left(h^2 + 2kh + 11h + k^2 + 11k + 11\right) - \left(k^2 + 9k + 1\right)}{h}$

$= \frac{h^2 + 2kh + 9h}{h}$

$= \frac{h(h + 2k + 9)}{h}$

$= h + 2k + 9$

$t(k) = k^2 + 9k + 1$

$t(k+h) = (h+k)^2 + 9(h+k) + 1$

$= h^2 + 2hk + 9h + k^2 + 9k + 1$

$\frac{t(k+h) - t(k)}{h} = \frac{\left(h^2 + 2kh + 9h + k^2 + 9k + 1\right) - \left(k^2 + 9k + 1\right)}{h}$

$= \frac{h^2 + 2kh + 9h}{h}$

$= \frac{h(h + 2k + 9)}{h}$

$= h + 2k + 9$

$t(k) = k^2 + 9k + 1$

$t(k+h) = (h+k)^2 + 9(h+k) + 1$

$= h^2 + 2hk + 7h + k^2 + 7k - 7$

$\frac{t(k+h) - t(k)}{h} = \frac{\left(h^2 + 2kh + 13h + k^2 + 13k + 23\right) - \left(k^2 + 9k + 1\right)}{h}$

$= \frac{h^2 + 2kh + 9h}{h}$

$= \frac{h(h + 2(k+1) + 9)}{h}$

$= h + 2k + 9$

Solution