### 3rd December

Expand and simplify

\[(3x - 1)^2(x + 2)\]

Here are the first 5 terms of a quadratic sequence

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<tbody>
<tr>
<td>9</td>
<td>17</td>
<td>29</td>
<td>45</td>
<td>65</td>
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Find an expression, in terms of \( n \), for the \( n \)th term of this quadratic sequence.

Pyramid 1 has a base of side length 8cm. Pyramid 2 has a base of side length 4cm. The perpendicular height of pyramid 1 is 10cm.

Calculate the volume of frustum 3.

A square based pyramid 1 is divided into two parts: a square based pyramid 2 and a frustum 3, as shown.

Prove that the difference between the squares of any two consecutive integers is equal to the sum of the two integers.