PARALLEL OUESTIONS FROM THE 2013 NCEA EXAMINATIONS ALGEBRA
ACHIEVEMENT

| 1a Factorise $8 x^{2}+10 x-3$ | 1b Solve $8 x^{2}+10 x-3=0$ |
| :---: | :---: |
| $\text { 2a } \begin{aligned} & \text { Simplify } \\ & \frac{\left(5 b^{3}\right)^{2}}{\left(2 b^{5}\right)^{4}} \end{aligned}$ | $\begin{array}{ll} \hline \text { 2b } & \text { Simplify } \\ & \left(\frac{81 \mathrm{c}^{8}}{16 \mathrm{~d}^{12}}\right)^{1 / 4} \end{array}$ |
| $\begin{array}{ll} 3 \mathrm{a} & \begin{array}{l} \text { Solve } \\ \log _{x}(32)=5 \end{array} \end{array}$ | 3b If $\$ 2000$ is invested at $8 \%$ interest, then the final amount A in n years is given by $\mathrm{A}=2000 \times(1.08)^{\mathrm{n}}$ <br> Find $A$ if $n=6$ years |

PARALLEL QUESTIONS FROM THE 2013 NCEA EXAMINATIONS ALGEBRA
MERIT

| 1c Simplify FULLY $\frac{5 x^{2}-45}{x^{2}+x-12}$ | 1d Solve $(x+1)-2 \sqrt{ }(x+1)-8=0$ HINT let $b^{2}=(x+1)$ |
| :---: | :---: |
| 2c Simplify $\left(c^{6}\right)^{1 / 2} \times\left(c^{12}\right)^{1 / 3}$ | 2d <br> Phil thinks of a number <br> He squares it <br> Then adds 5 times the original number <br> The answer is 66 <br> Form an equation and solve it to find his number. |
| 3c Solve $5^{(x+4)}=6 \times 3^{x}$ | 3d If $\$ 2000$ is invested at $8 \%$ interest, then the final amount A in n years is given by $\mathrm{A}=2000 \times(1.08)^{\mathrm{n}}$ When will the amount $A$ be greater than $\$ 6000$ ? |

