## PARALLEL QUESTIONS FROM THE 2013 NCEA EXAMINATIONS ALGEBRA

| 1. Eastoriza            | 1h Colve   |
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| $8x^2 + 10x - 3$        | $8x^2 + 10x - 3 = 0$   |
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| 2a Simplify             | 2b Simplify  |
| $(5h^3)^2$              |  |
| $\frac{(30)}{(2b^5)^4}$ | $\left( \begin{array}{c} 0 \\ 0 \\ 1 \end{array} \right)^{7}$  |
| (20)                    | $\frac{\delta 1C}{1-1}$  |
|                         | $\left[ \left( 16d^{12} \right) \right]$   |
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| 3a Solve                | 3b If \$2000 is invested at 8% interest,   |
| Log(32) = 5             | then the final amount A in n years is  |
|                         | $\frac{1}{1000} = \frac{1}{1000} = \frac{1}{1000} = \frac{1}{1000} = \frac{1}{10000} = \frac{1}{10000000000000000000000000000000000$ |
|                         | given by $A = 2000 \times (1.08)$  |
|                         | Find A if $n = 6$ years  |
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| ALGEBRA<br>MERIT   |   |
|--|---|
| 1c Simplify FULLY<br>$\frac{5x^2 - 45}{x^2 + x - 12}$              | 1d<br>Solve $(x + 1) - 2\sqrt{(x + 1)} - 8 = 0$<br>HINT let $b^2 = (x + 1)$   |
| 2c Simplify<br>$(c^6)^{\frac{1}{2}} \times (c^{12})^{\frac{1}{3}}$ | 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<br>his number.           |
| 3c Solve $5^{(x+4)} = 6 \times 3^x$                                | 3d If \$2000 is invested at 8%<br>interest, then the final amount A in n<br>years is given by $A = 2000 \times (1.08)^n$<br>When will the amount A be greater<br>than \$6000? |

## PARALLEL OUESTIONS FROM THE 2013 NCEA EXAMINATIONS