

**Pencils and Erasers Only – No Calculators Needed.**

1 Simplify:  $(x^2 + 4x + 8) - (x^2 - 4x + 8)$

2 Carry out the operations and simplify:  $(x^2 + 4x + 8)(x^2 - 4x + 8)$

3 Simplify to a form not involving negative exponents:

(a)  $(-2xy^2)^3$

(b)  $\left(\frac{2a^{-3}}{ac^{-2}}\right)^{-4}$

4 Combine into a single fraction in lowest terms:  $\frac{2x + 5}{x^2 - 6x + 9} - \frac{2x}{x^2 - 9}$

5 Factor completely:  $24x^3 - 30x^2 + 9x$