C1 Revision for Test Algebra 1

1. Solve the equations and show their points of minimum

$x^2 + 2x = 5$

$x^2 + 6x - 3 = 0$

$x^2 - 3x - 7 = 0$

2. Find p, q, and r, such that

$6x^2 + 12x + 1 = p(x - q)^2 + r$

3. Rationalise the denominator

$\frac{2}{\sqrt{6} + 2} =$

$\frac{\sqrt{5} + 1}{\sqrt{5} - \sqrt{3}} =$

$\frac{1}{4 - \sqrt{10}} =$

4. Solve the simultaneous equations

$y = 2x + 1$

$3y + 10x = 7$

$x^2 + xy + y^2 = 7$

$2x + y = 1$

5. Simplify

$3^{\frac{1}{4}} \times 3^{\frac{3}{4}} =$

$\sqrt{64} \times \sqrt[3]{64} \times \sqrt[6]{64} =$

$2\sqrt{1210} =$

$4\sqrt{5} - 3\sqrt{20} + \sqrt{125} =$

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