NATIONAL SENIOR CERTIFICATE: MATHEMATICS: PAPER I - MARKING GUIDELINES

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NOTE:

- If a candidate answers a question more than once, only mark the FIRST attempt.
- · Consistent Accuracy applies in all aspects of the marking memorandum.

SECTION A

QUESTION 1

(a)(1)	$px^{2} + 2x - 3 = 0$ $x = \frac{(-2) \pm \sqrt{(2)^{2} - 4(p)(-3)}}{2(p)}$ $x = \frac{-2 \pm \sqrt{4 + 12p}}{2p}$ $x = \frac{-2 \pm 2\sqrt{1 + 3p}}{2p}$ $x = \frac{-1 \pm \sqrt{1 + 3p}}{p}$	use of quadratic formula $x = \frac{-2 \pm \sqrt{4 + 12p}}{2p}$ simplified solution
(a)(2)	Non-real roots for: $1+3p<0$ $p<-\frac{1}{3}$	$\Delta < 0$ $\rho < -\frac{1}{3}$ No marks for $\Delta > 0$
(b)	$\sqrt{x-2} + 4 = x$ $x^{2} - 9x + 18 = 0$ $(x-2) = (x-4)^{2}$ $x-2 = x^{2} - 8x + 16$ $x = 6 \text{ or } x = 3$ $\text{n/v for } x = 3$	Isolate surd $x^2 - 4x + 4$ $x^4 - 8x + 16$ factors answer with selection
(c)	$(x+3)(x-1) \ge 0$ Crit. values: -3 ; 1 $x \le -3$ or $x \ge 1$	Number line/graph $x \le -3$ or $x \ge 1$

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Mathematics P1 Preparatory Examination 2014

Dani Ben-Zvi, Katie Makar, Joan Garfield

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