QUESTION NUMBER

5.

$(3p-2)^2 - 4(2)(p) = 0$

$9p^2 - 12p + 4 - 8p = 0$

$9p^2 - 20p + 4 = 0$

$(9p-2)(p-2) = 0$

$p = \frac{2}{9} \quad p = 2$

DO NOT WRITE IN THIS MARGIN

(36)

$-18 \quad -2$

$9p^2 - 18p - 2p + 4$

$= 9p(p-2) - 2(p-2)$

$= (9p-2)(p-2)$

Question	Generic scheme	Illustrative scheme	Max mark
5.	$\bullet^1$ use the discriminant $\bullet^2$ apply condition and express in standard quadratic form $\bullet^3$ process for p	$\bullet^1$ $(3p-2)^2-4\times2\times p$ $\bullet^2$ $9p^2-20p+4=0$ $\bullet^3$ $\frac{2}{9}, 2$	**3**

Notes:

1. Where candidates states an incorrect condition, $\bullet^2$ is not available. However, $\bullet^3$ is available for finding the roots of the quadratic - see Candidate B.
2. Where x appears in any expression, no further marks are available.

Commonly Observed Responses:

Candidate A

(For equal roots) $b^2-4ac=0$

$(3p-2)^2-4\times2\times p$ $\bullet^1$ ✓

$9p^2-20p+4$ $\bullet^2$ ✓

$p=\frac{2}{9}, 2$ $\bullet^3$ ✓

Candidate B

(For equal roots) $b^2-4ac>0$ $\bullet^2$ ✗

$(3p-2)^2-4\times2\times p$ $\bullet^1$ ✓

$9p^2-20p+4=0$

$p=\frac{2}{9}, 2$ $\bullet^3$ $\checkmark_1$

⋮