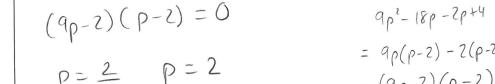
5. 
$$(3p-2)^2 - 4(2)(p) = 0$$

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

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

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

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



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

Question		on	Generic scheme	Illustrative scheme	Max mark
5.			•¹ use the discriminant	$ \bullet^1 (3p-2)^2 - 4 \times 2 \times p $	3
			•² apply condition and express in standard quadratic form		
			$\bullet$ <sup>3</sup> process for $p$	$\bullet^3 \frac{2}{9},2$	

## Notes:

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

## Commonly Observed Responses:

Candidate A		Candidate B	
(For equal roots) $b^2 - 4ac =$	= 0	(For equal roots) $b^2 - 4ac > 0$	•² <b>*</b>
$(3p-2)^2-4\times2\times p$	•¹ ✓	$(3p-2)^2-4\times2\times p$	•¹ ✓
$9p^2 - 20p + 4$	•² <b>✓</b>	$9p^2 - 20p + 4 = 0$	
$p = \frac{2}{9}, 2$	•³ <b>✓</b>	$p = \frac{2}{9}, 2$	● <sup>3</sup> ✓ 1
		:	