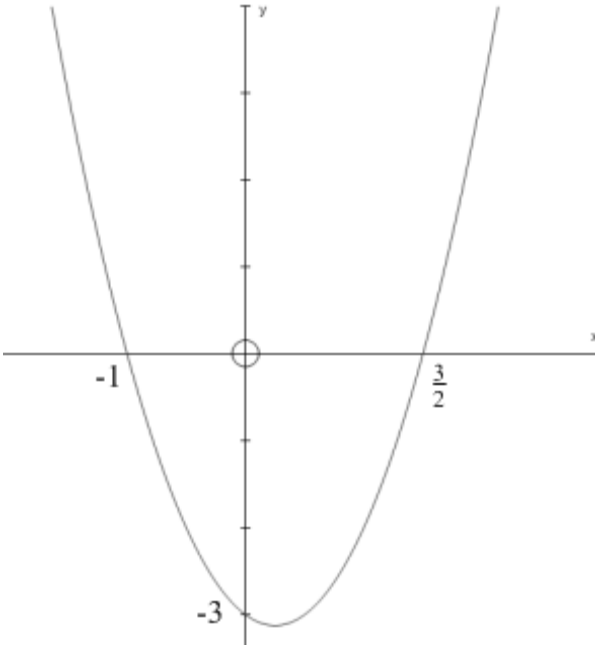


Question		Answer	Marks	AO	Guidance
7	(a)	$x = \frac{3}{2}, x = -1$ 	B1 B1 B1 [3]	1.1 1.1 1.1	BC Correct roots Good curve: <ul style="list-style-type: none"> • Correct shape, symmetrical positive quadratic • FT Minimum point in the correct quadrant for their roots • FT their x intercepts correctly labelled y intercept at $(0, -3)$ Must have a curve
7	(b)	$x \in \left(-1, \frac{3}{2}\right)$	M1 A1FT [2]	1.1 1.1	Choosing the interval between their x intercepts This interval identified clearly FT their x values in part (i) Other clear notation is acceptable

Question		Answer	Marks	AO	Guidance	
7	(c)	<p>No real roots implies that the discriminant is negative</p> $b^2 - 4ac = 1^2 - 4 \times 2 \times -(3+k) < 0$ $25 + 8k < 0$ $k < -\frac{25}{8}$	<p>M1</p> <p>A1</p> <p>A1</p> <p>[3]</p>	<p>3.1a</p> <p>1.1</p> <p>3.2a</p>		<p>OR</p> <p>M1 Attempt to find turning point and use $k < y_{\min}$</p> <p>A1 Turning point at $(\frac{1}{4}, -\frac{25}{8})$</p>
8	(a)	<p>E.g. Members who attend may be of a particular type</p> <p>E.g. Absent members cannot be included</p>	<p>B1</p> <p>[1]</p>	<p>2.5</p>	<p>Any correct explanation</p> <p>Sample is not random B0</p>	
8	(b)	<p>156, 248</p> <p>73, 181</p>	<p>B1</p> <p>B1</p> <p>[2]</p>	<p>1.1</p> <p>1.1</p>	<p>Allow 073</p>	<p>965 must be discarded</p> <p>In <i>this</i> context do not accept a repeat of 156</p>