Answers and mark guide

Q	Answer	Working	Marks
1	**4 < x < 6**	Factorise, sketch the graph, then read off the regions.	4
2	**4 ≤ x ≤ 6**	Factorise, sketch the graph, then read off the regions.	4
3	**2 < x < 4**	Factorise, sketch the graph, then read off the regions.	4
4	**−5 ≤ x ≤ −3**	Factorise, sketch the graph, then read off the regions.	4
5	**x ≥ −1 or x ≥ 5**	Factorise, sketch the graph, then read off the regions.	4
6	**−2 ≤ x ≤ 6**	Factorise and use a sketch.	4
7	**x > −5 or x > 5**	Difference of two squares.	4
8	**-4, -3, -2, -1, 0, 1, 2, 3, 4**	−5 < x < 5	5
9	**x ≤ 2 or x ≥ 5**	Outside the roots.	4
10	**x < −2 or x > 2**	Both roots.	3
11	**x < 4 or x > 5**	Multiply by −1 and reverse the inequality.	5
12	**x ≥ −3 or x ≥ 0**	Factorise x(x + a).	4
13	**−1/2 < x < 3**	(2x + 1)(x − 3) < 0	5
14	**3, 4**	3 ≤ x ≤ 4	5
15	**−3 < x < 4**	$x^2 - x - 12 < 0$	5
16	**x < −0.24 or x > 4.24**	Use the quadratic formula.	6
17	**x ≤ −5/2 or x ≥ 1**	(2x + 5)(x − 1) ≥ 0	6
18	**−4 < k < 4**	$k^2 - 16 < 0$	6
19	**k < 9**	36 − 4k > 0	6
20	**x < −4**	x^2 + x − 12 > 0 gives x < −4 or x > 3; 3x − 1 < 8 gives x < 3; take the overlap	6

My score: _____ / **94** Questions 1–15 = 64 marks (Foundation focus)