Q1.

| | 1 EITH | ER: State or imply non-modular inequality $(x - 4)^2 > (x + 1)^2$, or corresponding equation Expand and solve a linear inequality, or equivalent Obtain critical value $1\frac{1}{2}$ State correct answer $x < 1\frac{1}{2}$ (allow \leq) | B1 M1 A1 A1 | |
|-----|--------|--|----------------------|---|
| | OR: | State a correct linear equation for the critical value e.g. $4 - x = x + 1$ Solve the linear equation for x Obtain critical value $1\frac{1}{2}$, or equivalent State correct answer $x < 1\frac{1}{2}$ | B1 M1 A1 A1 | |
| | OR: | State the critical value $1\frac{1}{2}$, or equivalent, from a graphical method or inspection or by solving a linear inequality State correct answer $x < 1\frac{1}{2}$ | by B3 B1 | |
| | | | [4] | |
| Q2. | | | | |
| 1 | EITHER | State or imply non-modular inequality $x^2 > (3x - 2)^2$, or corresponding equation | M1 | |
| | | Expand and make reasonable solution attempt at 2- or 3-term quadratic, or equivalent | M1 | |
| | | Obtain critical values ½ and 1 | A1 | |
| | | State correct answer $\frac{1}{2} < x < 1$ | A1 | |
| | OR | State one correct linear equation for a critical value | M1 | |
| | | State two equations separately | A1 | |
| | | Obtain critical values ½ and 1 | A1 | |
| | | State correct answer $\frac{1}{2} < x < 1$ | A1 | |
| | OR | State one critical value from a graphical method or inspection or by solving a linear inequality | B1 | |
| | | State the other critical value correctly State correct answer $\frac{1}{2} < x < 1$ | B2 B1 | |
| Q3. | | | | |
| â | ETTHER | State or imply non-modular inequality $(2x-7)^2 > 3^2$, or corresponding equation | MI | |
| | 1000 | Obtain critical values 2 and 5 | AL | |
| | 140 | State correct answer $x \in \mathcal{I}, x > 5$ | AI | |
| | OR. | State one critical value, $c.g. x = 5$, by solving a linear equation (or inequality) or from a | BI | |
| | | graphical method or by inspection State the other critical value correctly | BI | |
| | | State correct hasver $x < 2$, $x > 5$ | B1 | j |
| | | And the second of the second o | | |

Q4.

| 1 | EITHER | State or imply non-modular inequality $(x-3)^2 > (x+2)^2$, or corresponding equation | M1 | |
|---|--------|---|----|-----|
| | | Expand and solve a linear inequality, or equivalent | M1 | |
| | | Obtain critical value $\frac{1}{2}$ | A1 | |
| | | State correct answer $x < \frac{1}{2}$ (allow $x \le \frac{1}{2}$) | A1 | |
| | OR | State a correct linear equation for the critical value, e.g. $3 - x = x + 2$, | | |
| | | or corresponding correct inequality, e.g. $-(x-3) > (x+2)$ | M1 | |
| | | Solve the linear equation, or inequality | M1 | |
| | | Obtain critical value $\frac{1}{2}$ | A1 | |
| | | State correct answer $x < \frac{1}{2}$ | A1 | |
| | OR | Make recognisable sketches of both $y = x-3 $ and $y = x+2 $ on a | | |
| | | single diagram | B1 | |
| | | Obtain a critical value from the intersection of the graphs | M1 | |
| | | Obtain critical value $\frac{1}{2}$ | A1 | |
| | | State final answer $x < \frac{1}{2}$ | A1 | [4] |
| | | | | |

Q5.

| 1 | EITHER | State or imply non-modular inequality $(3x - 1)^2 < 2^2$, or corresponding equation or pair of linear equations | M1 | |
|---|--------|--|----------|-----|
| | | Obtain critical values $-\frac{1}{3}$ and 1 | A1 | |
| | | State correct answer $-\frac{1}{3} \le x \le 1$ | A1 | |
| | OR | State one critical value, e.g. $x = 1$, by solving a linear equation (or | | |
| | | inequality) or from a graphical method or by inspection State the other critical value correctly | B1 B1 | |
| | | State correct answer $-\frac{1}{2} < x < 1$ | B1 | [3] |

Q6.

EITHER: State or imply non-modular inequality $(3x + 2)^2 < x^2$, or corresponding quadratic equation, or pair of linear equations $3x + 2 = \pm x$ Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations M1 Obtain critical values x = -1 and $x = -\frac{1}{2}$ A1 State answer $-1 < x < -\frac{1}{2}$ A1 OR: Obtain the critical value x = -1 from a graphical method or by inspection, or by solving a linear equation or inequality B₁ Obtain the critical value $x = -\frac{1}{2}$ similarly B2 State answer $-1 < x < -\frac{1}{2}$ B1 [4]

Q7.

| 1 | EITHER: | State or imply non-modular inequality $(2x-3)^2 > 5^2$, or corresponding equation or pair of linear equations Obtain critical values -1 and 4 State correct answer $x < -1, x > 4$ | M1 A1 A1 | |
|-----|-------------|--|-----------------------------------|-----|
| | OR: | State one critical value, e.g. $x = 4$, having solved a linear equation (or inequality) or from a graphical method or by inspection State the other critical value correctly State correct answer $x < -1$, $x > 4$ | B1 B1 B1 | [3] |
| Q8. | | | | |
| 3 | EITHE | R State or imply non-modular inequality $(2x-1)^2 < (x+4)^2$, or corresponding equation or pair of linear equations Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations | M1 M1 | |
| | OR | Obtain critical values -1 and 5 State correct answer $-1 < x < 5$ Obtain one critical value, e.g. $x = 5$, by solving a linear equation (or inequality) or from a graphical method or by inspection Obtain the other critical value similarly State correct answer $-1 < x < 5$ | A1 A1 B1 B2 B1 | [4] |
| Q9. | | | | |
| 1 | EITHER | Attempt to square both sides obtaining three terms on each side Attempt solution of three-term quadratic equation Obtain $5x + 4x - 9 = 0$ and hence $-\frac{9}{5}$ and 1 | M1 M1 A1 | |
| | OR | Obtain value 1 from graphical method, inspection or linear equation Obtain value $-\frac{9}{5}$ similarly | B1 B2 | [3] |
| Q10 | • | | | |
| 1 | <u>Or</u> : | Obtain value $x^3 = 27$ from inspection, equation, Obtain value $x^3 = 1$ similarly Obtain $x = 1$ and $x = 3$ Attempt to square both sides obtaining 3 terms on LHS Attempt solution for x^3 of 3-term quadratic Obtain $x^3 = 1$ and $x^3 = 27$ Obtain $x = 1$ and $x = 3$ | B1 B2 B1 M1 DM1 A1 | [4] |

Q11.

| 1 | Either: | State or imply non-modular inequality $(x+3)^2 < (2x+1)^2$ or corresponding equation or pair of linear equations Attempt solution of 3-term quadratic or of 2 linear equations Obtain critical values $-\frac{4}{3}$ and 2 State answer $x<-\frac{4}{3}$, $x>2$ Obtain critical value $x=2$ from graphical method, inspection, equation Obtain critical value $x=-\frac{4}{3}$ similarly State answer $x<-\frac{4}{3}$, $x>2$ | B1 M1 A1 A1 B1 B2 | [4] |
|-----|---------------|---|----------------------------------|-----|
| Q12 | <u>.</u> | | | |
| 1 | <u>Either</u> | State or imply non-modular equation $(2^x - 7)^2 = 1^2$, or corresponding pair of equations Obtain $2^x = 8$ and $2^x = 6$ State answer 3 Use logarithmic method to solve an equation of the form $2^x = k$, where $k > 0$ State answer 2.58 | M1 A1 B1 M1 A1 | |
| | <u>Or</u> | State or imply one value for 2^x , e.g. 8, by solving an equation or by inspection State answer 3 State second value for 2^x Use logarithmic method to solve an equation of the form $2^x = k$, where $k > 0$ State answer 2.58 | B1 B1 B1 M1 | [5] |
| Q13 | 3. | | | |
| 2 | Either | State or imply non-modular inequality $(x-8)^2 > (2x-4)^2$, or corresponding equation or pair of linear equations Make reasonable solution attempt at a quadratic, or solve two linear equations Obtain critical values 4 and -4 State correct answer $-4 < x < 4$ | M1 M1 A1 | |
| | <u>Or</u> | Obtain one critical value, e.g. $x = 4$, by solving a linear equation (or inequality) or from a graphical method or by inspection Obtain the other critical value similarly State correct answer $-4 < x < 4$ | B1 B2 B1 | [4] |

Q14.

| 1 | EITHER: | State or imply non-modular inequality $(2x-1)^2 < (3x)^2$, or con- | | | | B1 | 11.2 |
|---|---------|--|-------------------------|-----|------|----|------|
| | | Expand and make reasonable solution attempt at 2/01 3-term qu | adratic, or equivalent | | | M1 | 0 |
| | | Obtain critical values -1 and $\frac{1}{5}$ | | | | A1 | |
| | | State correct answer $x < -1$, $x > \frac{1}{5}$ | 22 22 | | | Al | |
| | OR: | State one correct equation for a critical value e.g. $2x - 1 = 3x$ | | | | M1 | 0 |
| | | State two relevant equations separately e.g. $2x - 1 = 3x$ and $2x - 1 = 3x$ | -1=-3x | | | A1 | |
| | | Obtain critical values -1 and $\frac{1}{5}$ | | | | A1 | |
| | | State correct answer $x < -1$, $x > \frac{1}{5}$ | | | 4 | A1 | 100 |
| | OR: | State one critical value (probably $x = -1$), from a graphical met | hod or by inspection or | by | | | 50 |
| • | | solving a linear inequality | ahi . | | 5 | BI | |
| | | State the other critical value correctly | W 11 19 | | | B2 | |
| | | State correct answer $x < -1$, $x > \frac{1}{5}$ | | | | B1 | -4 |
| | | [The answer $\frac{1}{5} < x < -1$ scores B0.] | | 9.0 | 11.0 | | |

Q15.

| 1 | EITHER: | State or imply non-modular inequality e.g. $-2 < 8-3x < 2$, or $(8-3x)^2 < 2^2$, or corresponding equation or pair of equations | M1 |
|---|---------|---|----------|
| | | Obtain critical values 2 and $3\frac{1}{3}$ | A1 |
| | | State correct answer $2 < x < 3\frac{1}{3}$ | A1 |
| | OR: | State one critical value (probably $x = 2$), from a graphical method or by inspection or by solving a linear equality or equation State the other critical value correctly | B1 B1 |
| | | State correct answer $2 < x < 3\frac{1}{3}$ | B1 |
| | | | [3] |

Q16.

| 1 | | State or imply non-modular inequality $(x + 1)^2 > x^2$ or corresponding equation or linear equation $x + 1 = -x$ | ng B1 | |
|---|-----------------|---|----------|---|
| | 3 · PANY (1984) | Obtain critical value $-\frac{1}{2}$ | B1 | |
| | | State answer $x > -\frac{1}{2}$ | B1 | |
| | OR: | Obtain critical value $-\frac{1}{2}$ by solving a linear inequality or by | | |
| | | graphical method or inspection | B2 | |
| | | State answer $x > -\frac{1}{2}$ | B1 | 3 |
| | [For 2x + | $1 > 0, x > +\frac{1}{2}$, or similar reasonable method] | M1 | |

Q17.

| | | 1 | Use logarithms to obtain a linear inequality in z , or corresponding equation Obtain critical value 3.11, or exact equivalent Obtain unswer $z>3.11$ | M) A) | | |) |
|----|-------|--|--|----------------------|---|-----|---|
| Q1 | 8. | | | | | | |
| 1 | | EITHE | ER: State or imply non-modular inequality $(2x-1)^2 > x^2$ or corresponding quadratic equation or pair of linear equations $2x-1=\pm x$ Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations | MI MI | | | |
| | | | Obtain critical values $x = 1$ and $x = \frac{1}{3}$ | AI | | | |
| | | | State answer $x < \frac{1}{3}, x > 1$ | A1 | | | |
| | | C | OR: Obtain critical value x = 1 from a graphical method, or by inspection, or by solving a linear inequality or linear equation. Obtain the critical value x = ¹ / ₃ similarly. | B1 B2 | | | |
| | | | State answer $x < \frac{1}{3}$, $x > 1$ | Bi | | 9 | 4 |
| Q1 | 102.9 | | ain critical values 4 and 6 te answer $4 < y < 6$ | B1 B1 | [| [2] | |
| | (ii) | (ii) Use correct method for solving an equation of the form $3^x = a$, where $a > 0$ Obtain one critical value, i.e. either 1.26 or 1.63 | | M1 A1 A1 | [| [3] | |
| Q2 | 0. | | | | | | |
| 1 | EIT | HER: | State or imply non-modular inequality $(x-3)^2 > (2x)^2$ or corresponding quadratic | | | | |
| | | | equation or pair of linear equations $(x-3)=\pm 2x$ Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations Obtain critical values $x=1$ and $x=-3$ State answer $-3 < x < 1$ | M1 M1 A1 A1 | | | |
| | | OR: | Obtain critical value $x = -3$ from a graphical method, or by inspection, or by solving a linear inequality or linear equation Obtain the critical value $x = 1$ similarly State answer $-3 < x < 1$ | B1 B2 B1 | | [4] | |

Q21.

| EITHER: | | | |
|---------|--|---|---|
| | | MI | |
| | Make reasonable solution attempt at a 3-term quadratic, or solve two linear | | |
| | equations | M1 | |
| | Obtain critical values $x = -6$ and $x = 0$ | A1 | |
| | State answer $-6 < x < 0$ | A1 | |
| OR: | obtain the critical value $x = -6$ from a graphical method or by inspection, or by | | |
| | solving a linear equation or inequality | B 1 | |
| | Obtain the critical value $x = 0$ similarly | B2 | |
| | State answer $-6 < x < 0$ | B 1 | [4] |
| | | Obtain critical values $x = -6$ and $x = 0$ State answer $-6 < x < 0$ OR: obtain the critical value $x = -6$ from a graphical method or by inspection, or by solving a linear equation or inequality Obtain the critical value $x = 0$ similarly | quadratic equation, or pair of linear equations $2x + 3 = \pm(x - 3)$ M1 Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations M1 Obtain critical values $x = -6$ and $x = 0$ A1 State answer $-6 < x < 0$ A1 OR: obtain the critical value $x = -6$ from a graphical method or by inspection, or by solving a linear equation or inequality B1 Obtain the critical value $x = 0$ similarly B2 |

Q22.

| 1 | EITHER: | Obtain a non-modular inequality from $(x + 3)^2 > (2x)^2$, or corresponding | | |
|---|---------|--|----|-----|
| | | equation, or pair of linear equations $(x + 3) = \pm 2x$ | M1 | |
| | | Make reasonable solution attempt at a 3-term quadratic, or solve two linear | | |
| | | equations | M1 | |
| | | Obtain critical values $x = -1$ and $x = 3$ | A1 | |
| | | State answer $-1 < x < 3$ | A1 | |
| | OR: | Obtain critical value $x = 3$ from a graphical method, or by inspection, or by solving | | |
| | | a linear inequality or linear equation | B1 | |
| | | Obtain the critical value $x = -1$ similarly | B2 | |
| | | State answer $-1 < x < 3$ | B1 | [4] |

Q23.

| 1 | EITHER: | State or imply non-modular inequality $(x+1)^2 > (x-4)^2$, or corresponding | | |
|---|---------|---|----|-----|
| | | equation or pair of linear equations | M1 | |
| | | Obtain critical value $\frac{3}{2}$ | A1 | |
| | | State correct answer $x > \frac{3}{2}$ | A1 | |
| | OR: | State a correct linear equation for the critical value, e.g. $x + 1 = -x + 4$, or corresponding correct linear inequality, e.g. $x + 1 > -(x - 4)$ | M1 | |
| | | Obtain critical value $\frac{3}{2}$ | A1 | |
| | | State correct answer $x > \frac{3}{2}$ | A1 | [3] |

Q24.

1 EITHER State or imply non-modular inequality $(3x + 1)^2 > 8^2$, or corresponding equation or pair of linear equations M1 Obtain critical values $\frac{7}{3}$ or -3A1 State correct answer x < -3 or $x > \frac{7}{3}$ A1 OR State one critical value, e.g. x = -3, by solving a linear equation (or inequality) or from a graphical method or by inspection State the other critical value correctly B1 State correct answer x < -3 or $x > \frac{7}{3}$ B1 [3]

Q25.

| 1 | EITHER | State or imply non-modular inequality $(4 - 5x)^2 < 3^2$, or corresponding equation or pair of linear equations | M1 | |
|---|--------|--|------------|-----|
| | | Obtain critical values $\frac{1}{5}$ and $\frac{7}{5}$ | A 1 | |
| | | State correct answer $\frac{1}{5} < x < \frac{7}{5}$ | A1 | |
| | OR | State one critical value, e.g. $x = \frac{1}{5}$, by solving a linear equation (or inequality) | | |
| | | or from a graphical method or by inspection | B 1 | |
| | | State the other critical value correctly | B1 | |
| | | State correct answer $\frac{1}{5} < x < \frac{7}{5}$ | B1 | [3] |

Q26.

| 1 | EITHER | State or imply non-modular inequality $(x+2)^2 > \left(\frac{1}{2}x-2\right)^2$, or corresponding | | |
|---|--------|--|-------|-----|
| | | equation or pair of linear equations | M1 | |
| | | Make reasonable solution attempt at a 3-term quadratic, or solve two linear | | |
| | | equations | M1 | |
| | | Obtain critical values –8 and 0 | A1 | |
| | | State correct answer $x < -8$ or $x > 0$ | A1 | |
| | OR | Obtain one critical value, e.g. $x = -8$, by solving a linear equation (or inequality | y) or | |
| | | from a graphical method or by inspection | B1 | |
| | | Obtain the other critical value similarly | B2 | |
| | | State correct answer $x < -8$ or $x > 0$ | B1 | [4] |

Q27.

| 2 | EITHER | State or imply non-modular inequality $(2x - 3)^2 \le (3x)^2$, or corresponding equation or pair of linear equations | M1 | |
|---|--------|---|----|-----|
| | | Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations | M1 | |
| | | Obtain critical values -3 and $\frac{3}{5}$ | A1 | |
| | | State correct answer $x \le -3$ or $x \ge \frac{3}{5}$ | A1 | |
| | OR | State one critical value, e.g. $x = -3$, by solving a linear equation (or inequality) | | |
| | | or from a graphical method or by inspection | B1 | |
| | | State the other critical value correctly | B2 | |
| | | State correct answer $x \le -3$ or $x \ge \frac{3}{5}$ | B1 | [4] |

Q28.

1

| EITHER | State or imply non-modular inequality $(x-2)^2 \ge (x+5)^2$, or | | |
|---------------|---|----|-----|
| | corresponding equation or pair of linear equations | M1 | |
| | Obtain critical value $-\frac{3}{2}$ | A1 | |
| | State correct answer $x \le -\frac{3}{2}$ | A1 | |
| OR | State a correct linear equation for the critical value, e.g. $x - 2 = -x - 5$, | | |
| | or corresponding correct linear inequality, e.g. $x-2 \ge -x-5$ | M1 | |
| | Obtain critical value $-\frac{3}{2}$ | A1 | |
| | State correct answer $x \le -\frac{3}{2}$ | A1 | [3] |

Q29.

| 1 | EITHER | State or imply non-modular inequality $(2x+1)^2 < (2x-5)^2$, or | M1 | |
|---|--------|---|--------|--|
| | | corresponding equation or pair of linear equations | | |
| | | Obtain critical value 1 | A1 | |
| | | State correct answer $x < 1$ | A1 | |
| | OR | State the critical value $x = 1$, by solving a linear equation (or | | |
| | | inequality) or from a graphical method or by inspection | B2 | |
| | | State correct answer $x < 1$ | B1 [3] | |

Q30.

| 1 | Either | State or imply non-modular inequality $(x+1)^2 < (3x+5)^2$, or | | |
|---|-----------|---|----|-----|
| | | corresponding equation or pair of linear equations | M1 | |
| | | Make reasonable solution attempt at a 3-term quadratic, or solve | | |
| | | two linear equations | M1 | |
| | | Obtain critical values -2 and $-\frac{3}{2}$ | A1 | |
| | | State correct answer $x < -2$ or $x > -\frac{3}{2}$ | A1 | |
| | <u>Or</u> | Obtain one critical value, e.g. $x = -2$, by solving a linear equation (or inequality) | | |
| | | or from a graphical method or by inspection | B1 | |
| | | Obtain the other critical value similarly | B2 | |
| | | State correct answer $x < -2$ or $x > -\frac{3}{2}$ | B1 | [4] |

Q31.

| 1 | Either | State or imply non-modular inequality $(3x-2)^2 > (x+4)^2$ or corresponding equation | | |
|---|--------|---|----------|-----|
| | | or pair of linear equations Attempt solution of 3-term quadratic equation or of 2 linear equations | B1 M1 | |
| | | Obtain critical values $-\frac{1}{2}$ and 3 | A1 | |
| | | State answer $x < -\frac{1}{2}$, $x > 3$ | A1 | [4] |
| | Or | Obtain critical value $x = 3$ from graphical method, inspection, equation | В1 | |
| | | Obtain critical value $x = -\frac{1}{2}$ similarly | B2 | |
| | | State answer $x < -\frac{1}{2}, x > 3$ | B1 | [4] |

P3 (variant1 and 3)

Q1.

| nding B1 | |
|-------------|--------------------------------|
| M1 | |
| A1 | |
| A1 | |
| or by B1 B2 | |
| B1 | [4] |
| | |
| | B1 linear M1 A1 A1 or by B1 B2 |

Q2.

| 1 | EITHE | R: State or imply non-modular inequality $(x-3)^2 > (2(x+1))^2$, or corresponding quadratic | | |
|---|-------|--|------------|-----|
| | | equation, or pair of linear equations $(x-3) = \pm 2(x+1)$ | B1 | |
| | | Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations | M1 | |
| | | Obtain critical values -5 and $\frac{1}{3}$ | A1 | |
| | | State answer $-5 < x < \frac{1}{3}$ | A1 | |
| | OR: | Obtain the critical value $x = -5$ from a graphical method, or by inspection, | | |
| | | or by solving a linear equation or inequality | B 1 | |
| | | Obtain the critical value $x = \frac{1}{3}$ similarly | B2 | |
| | | State answer $-5 < x < \frac{1}{3}$ | B1 | [4] |
| | | [Do not condone \leq for \leq ; accept 0.33 for $\frac{1}{3}$.] | | |

Q3.

| 1 | EITHER | R: State or imply non-modular inequality $(4x + 3)^2 > x^2$, or corresponding equation | | |
|---|--------|--|------------|-----|
| | | or pair of equations $4x + 3 = \pm x$ | M1 | |
| | | Obtain a critical value, e.g1 | A1 | |
| | | Obtain a second critical value, e.g. $-\frac{3}{5}$ | A1 | |
| | | State final answer $x < -1, x > -\frac{3}{5}$ | A1 | |
| | OR: | Obtain critical value $x = -1$, by solving a linear equation or inequality, or from a graphimethod or by inspection | ical B1 | |
| | | Obtain the critical value $-\frac{3}{5}$ similarly | B2 | |
| | | State final answer $x < -1, x > -\frac{3}{5}$ | B1 | [4] |
| | | [Do not condone \leq or \geq .] | | |

Q4.

| 1 | EITHER: | State or imply non-modular inequality $(2-3x)^2 < (x-3)^2$, or corresponding equation | | |
|-----|---------|--|------------|-----|
| | | and make a reasonable solution attempt at a 3-term quadratic | M1 | |
| | | Obtain critical value $x = -\frac{1}{2}$ | A1 | |
| | | Obtain $x > -\frac{1}{2}$ | A1 | |
| | | Fully justify $x \ge -\frac{1}{2}$ as only answer | A1 | |
| | OR1: | State the relevant critical linear equation, i.e. $2 - 3x = 3 - x$ | B1 | |
| | | Obtain critical value $x = -\frac{1}{2}$ | B 1 | |
| | | Obtain $x > -\frac{1}{2}$ | B1 | |
| | | Fully justify $x > -\frac{1}{2}$ as only answer | B1 | |
| | OR2: | Obtain the critical value $x = -\frac{1}{2}$ by inspection, or by solving a linear inequality | B2 | |
| | | Obtain $x > -\frac{1}{2}$ | B1 | |
| | | Fully justify $x > -\frac{1}{2}$ as only answer | B 1 | |
| | OR3: | Make recognisable sketches of $y = 2 - 3x$ and $y = x - 3 $ on a single diagram | B1 | |
| | | Obtain critical value $x = -\frac{1}{2}$ | B1 | |
| | | Obtain $x > -\frac{1}{2}$ | B1 | |
| | | Fully justify $x > -\frac{1}{2}$ as only answer | B1 | [4] |
| | | [Condone \geq for $>$ in the third mark but not the fourth.] | | |
| | | | | |
| Q5. | | | | |
| | FITHER | Section 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. | | |
| 1 | EITHER: | State or imply non-modular inequality $(2(x-3))^2 > (3x+1)^2$, or corresponding quadratic equation, or pair of linear equations $2(x-3) = \pm (3x+1)$ | B1 | |
| | | Make reasonable solution attempt at a 3-term quadratic, or solve two linear | ы | |
| | | equations | M1 | |
| | | Obtain critical values $x = -7$ and $x = 1$ | A1 | |
| | | State answer $-7 < x < 1$ | A1 | |
| | OR: | Obtain critical value $x = -7$ or $x = 1$ from a graphical method, or by inspection, | | |
| | | or by solving a linear equation or inequality | B1 | |

B2

B1 [4]

Obtain critical values x = -7 and x = 1

State answer -7 < x < 1

[Do not condone: < for <.]

Q6.

| 1 | EITHER | State or imply non-modular inequality $(3(x-1))^2 < (2x+1)^2$ | | |
|---|---------------|---|------------|-----|
| | | or corresponding quadratic equation, or pair of linear equations $3(x-1) = \pm (2x+1)$ | B 1 | |
| | | Make reasonable solution attempt at a 3-term quadratic, or solve two linear equations | M1 | |
| | | Obtain critical values $x = \overline{5}$ and $x = 4$ | A1 | |
| | | $\frac{2}{}$ | | |
| | | State answer $\frac{1}{5} < x < 4$ | A1 | |
| | | 2 | | |
| | OR | Obtain critical value $x = \overline{5}$ or $x = 4$ from a graphical method, or by inspection, or | | |
| | by | | | |
| | | solving a linear equation or inequality | B 1 | |
| | | Obtain critical values $x = \frac{z}{5}$ and $x = 4$ | Da | |
| | | Obtain critical values $x = \frac{1}{2}$ and $x = 4$ | B2 | |
| | | State answer $\frac{2}{5} < x < 4$ | B 1 | [4] |
| | | [Do not condone ≤ for ≤ .] | | |

Q7.

| 1 | Either | State or imply non-modular inequality $(3x-1)^2 < (2x+5)^2$ or corresponding | | |
|---|--------|--|----|-----|
| | | quadratic equation or pair of linear equations $3x-1=\pm(2x+5)$ | B1 | |
| | | Solve a three-term quadratic or two linear equations $5x^2 - 26x - 24 < 0$ | M1 | |
| | | Obtain $-\frac{4}{5}$ and 6 | A1 | |
| | | State $-\frac{4}{5} < x < 6$ | A1 | |
| | Or | Obtain value 6 from graph, inspection or solving linear equation | В1 | |
| | | Obtain value $-\frac{4}{5}$ similarly | B2 | |
| | | State $-\frac{4}{5} < x < 6$ | B1 | [4] |