Linear Inequalities Mark Scheme

1. (a) −2, −1, 0, 1, 2,3 3

–. $\frac{5}{2} < \frac{2n}{2} \leq \frac{6}{2}$

M1 for – $\frac{5}{2} < \frac{2n}{2} \leq \frac{6}{2}$

A1 for – 2 and 3.

A1 for – 1, 0, 1, 2

(b) $x < 4$ 2

$5 + 11 > 5x - x$

M1 for 5 + 11 > 5x – x oe isolation

A1 for x < 4

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2. (–1,–1)(0,–1)
(1,–1) (0, 0)
(1, 0) (1, 1) 3

B3 for 6 points correct
(B2 for 3 points correct)
(B1 for 1 point correct)
NB: –B1 for each additional point over six

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3. (i) $x < 2$ 3

$3x < 6$

M1 for 3x < 6

A1 cao

(ii) Clear circle around 2, and solid line leading to left of diagram (or up to – 5 or arrow)

B1 cao

[3]

4. (a) eg $x = -2, y = -2$; $x = 0; y = 3$
Any correct pairs of integers 2

B2 for two correct pairs
(B1 for one correct pair)

(b) (1,1)
(1,2)
(2,1) 3

B3 for three correct points
(B2 for two correct points, B1 for one correct point)

***NB** If more than 3 pts marked, mark best three then deduct 1 mark for each additional point*

SC B2 for indicating the correct region

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5. (a) 3

B3 if fully correct
(B2 for 2 lines and appropriate shading ft from their lines or for 3 lines correct)
(B1 for 1 line correct)

(b) (2,2), (2,3), (2,4), (3,3) 2

B2 for all 4 correct with no extras
(B1 ft for 2 points correct from their region)

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6. (a) –2, –1, 0, 1, 2 2

B2 for all correct
(B1 for –1,0,1 if seen in list, B1 for –2 , –1, 1, 2)

(b) $4p + p < 8 + 7$
$p < 3$ 2

M1 for $4p + p < 8 + 7$
A1 cao

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7. (4,2), (5,1)
(5,2), (5,3) 3

B3 all correct and none incorrect
(B2 at least 2 correct and not more than 4 points).
*(B1 line $x = 6$ drawn **or** one point correct)*

[3]