GCSE HIGHER · REVISION MAT 2

Solving inequalities

1 Solve

$$5x - 3 \leq 22$$

2 Show $-1 \leq x < 4$ on the number line.



3 Amy solves $7 - 2x > 1$ and gets $x > 3$.

Explain her mistake and correct it.

4 Cinema tickets cost £8 each plus a £5 booking fee.

Ella can spend at most £70.

What is the greatest number of tickets she can buy?

5 Solve

$$2(x - 3) < 5x + 9$$

6 n is an integer.

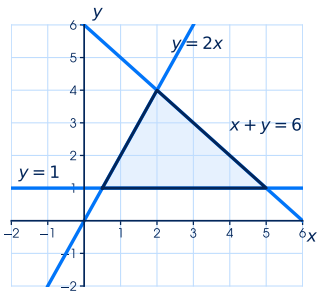
$$4n - 3 > 17 \text{ and } n^2 < 50$$

Find all possible values of n.

7 Solve

$$2x^2 + 5x - 3 > 0$$

8 Write down the three inequalities that define the shaded region.



ANSWERS · REVISION MAT 2

Solving inequalities

1 $5x \leq 25$

***x* ≤ 5**

2 **Closed circle at –1, open circle at 4, joined by a line.**



3 $-2x > -6$

Dividing by –2 reverses the sign.

***x* < 3**

4 $8n + 5 \leq 70$

$8n \leq 65 \Rightarrow n \leq 8.125$

8 tickets

5 $2x - 6 < 5x + 9$

$-15 < 3x$

***x* > –5**

6 $4n > 20 \Rightarrow n > 5$

$n^2 < 50 \Rightarrow n \leq 7$

***n* = 6 or 7**

7 $(2x - 1)(x + 3) > 0$

Critical values –3 and $\frac{1}{2}$

***x* < –3 or *x* > $\frac{1}{2}$**

8 ***y* ≥ 1**

y* ≤ 2*x

***x* + *y* ≤ 6**

Mr&Mrs MATHS