GCSE HIGHER · REVISION MAT 4

Solving inequalities

1 Solve

$$6 - x < 2$$

2 Solve

$$-5 < 2x + 1 \leq 9$$

3 List the integers that satisfy both

$$x > -2 \text{ and } x \leq 3$$

4 Car hire costs £40 plus 25p per mile.

Max can spend at most £75.

What is the greatest number of miles he can drive?

5 Solve

$$\frac{3x - 2}{5} > x - 4$$

6 A rectangle is x cm by $(x + 3)$ cm, where x is an integer.

Its area is at least 40 cm².

Its perimeter is less than 40 cm.

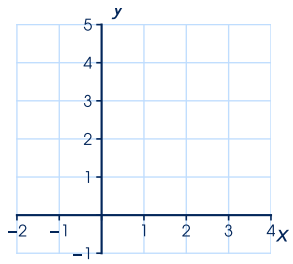
Find all possible values of x.

7 Solve

$$x^2 + 2x - 8 < 0$$

8 Find the points with integer coordinates that satisfy

$$y > 0,\ y < x + 1,\ x < 3$$



Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Solving inequalities

1 $-x < -4$

$x > 4$

2 $-6 < 2x \leq 8$

$-3 < x \leq 4$

3 $-1, 0, 1, 2, 3$

4 $40 + 0.25m \leq 75$

$0.25m \leq 35$

$m \leq 140$ miles

5 $3x - 2 > 5x - 20$

$18 > 2x$

$x < 9$

6 $x(x + 3) \geq 40 \Rightarrow x \geq 5$

$4x + 6 < 40 \Rightarrow x < 8.5$

$x = 5, 6, 7$ or 8

7 $(x + 4)(x - 2) < 0$

$-4 < x < 2$

8 $x = 1$: $y = 1$

$x = 2$: $y = 1, 2$

(1, 1), (2, 1), (2, 2)

Mr&Mrs MATHS