GCSE HIGHER · REVISION MAT 5

Solving inequalities

1 Solve

$$2x + 7 \geq 1$$

2 Solve

$$4(x - 1) < 2x + 6$$

3 Explain why no integer satisfies

$$3 < 2x < 4$$

4 Jo has £20.

She buys 3 notebooks at £x each and a pen for £2.60.

She has at least £5 left.

Find the greatest possible value of x.

5 Solve

$$\frac{x}{3} - 1 < \frac{x}{2}$$

6 n is a prime number.

$$1 < 3n - 5 \leq 13$$

Find all possible values of n.

7 Solve

$$3x^2 - 12 > 0$$

8 Solve

$$2x^2 - x - 15 \leq 0$$

List the integers that satisfy it.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Solving inequalities

1 $2x \geq -6$

$x \geq -3$

2 $4x - 4 < 2x + 6$

$2x < 10$

$x < 5$

3 $1.5 < x < 2$

There is no integer between 1.5 and 2.

4 $3x + 2.60 \leq 15$

$3x \leq 12.40$

$x \leq 4.13$, so £4.13

5 $2x - 6 < 3x$

$x > -6$

6 $6 < 3n \leq 18$

$2 < n \leq 6$

$n = 3$ or 5

7 $x^2 > 4$

$x < -2$ or $x > 2$

8 $(2x + 5)(x - 3) \leq 0$

$-2.5 \leq x \leq 3$

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

Mr&Mrs MATHS