Quadratic inequalities

Exit ticket ANSWERS Name _____

1 Solve $(x-3)(x-7)<0$.

$3 < X < 7$

2 Solve $(x+2)(x-4)>0$.

$X < -2$ or $X > 4$

3 Solve $(x+1)(x-3)\leq 0$. Write down the integers that fit.

$-1 \leq X \leq 3$; $-1, 0, 1, 2, 3$

The Maths Habit

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1 **Solve $(x - 3)(x - 7) < 0$.**

3 < X < 7

TESTS Below the x axis: in between the critical values

LOOK FOR *X < 3 or X > 7* that is above the axis, the answer to > 0; < 0 is below: in between

−7 < X < −3 the signs taken from the brackets: $x - 3 = 0$ when $x = 3$

FIX IT

Solve $(x - 2)(x - 8) < 0$. *2 < X < 8*

2 **Solve $(x + 2)(x - 4) > 0$.**

X < −2 or X > 4

TESTS Above the x axis: the two outside parts

LOOK FOR *−2 < X < 4* that is below the axis; > 0 is above: the two outside parts

X > 4 only one part: $x = -3$ gives $(-1)(-7) = 7$, which is > 0 too

FIX IT

Solve $(x + 5)(x - 1) > 0$. *X < −5 or X > 1*

3 **Solve $(x + 1)(x - 3) \leq 0$. Write down the integers that fit.**

−1 ≤ X ≤ 3; −1, 0, 1, 2, 3

TESTS Or equal to puts the critical values in; the integers that fit

LOOK FOR *0, 1, 2* ≤ includes the critical values: −1 and 3 each make it 0

−3, −2, −1, 0, 1 the signs taken from the brackets: $x + 1 = 0$ when $x = -1$

FIX IT

Solve $(x + 2)(x - 2) \leq 0$. Write down the integers that fit. *−2 ≤ X ≤ 2; −2, −1, 0, 1, 2*