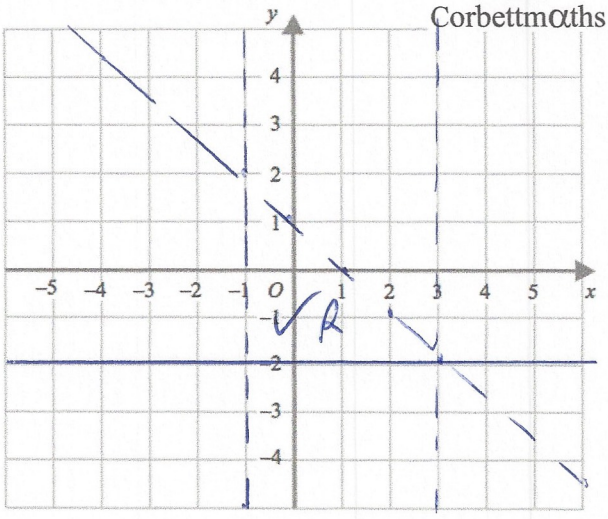
14th March

Corbettmaths

Show the region which satisfies

$-1 < x < 3$
$y \geq -2$
$x + y < 1$



Solve, giving your answers to one decimal place.

$2x^2 + 3x - 100 = 0$

$a = 2$
$b = 3$
$c = -100$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x = \frac{-3 \pm \sqrt{9 - -800}}{4}$

$x = \frac{-3 \pm \sqrt{809}}{4}$

$x = \frac{-3 + \sqrt{809}}{4}$ or $x = \frac{-3 - \sqrt{809}}{4}$

$x = 6.4$ or $x = -7.9$

H varies directly to the cube of c.

When H = 40, c = 2.

$H \propto c^3$

(a) Express H in terms of c.

$H = kc^3$

$40 = k \times 2^3$
$40 = k \times 8$
$k = 5$

$H = 5c^3$

(b) Find the value of H when c = 5.

$H = 5 \times 5^3$
$H = 5 \times 125$
$H = 625$

(c) Find the value of c when H = 5000.

$5000 = 5c^3$
$1000 = c^3$
$c = 10$

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