

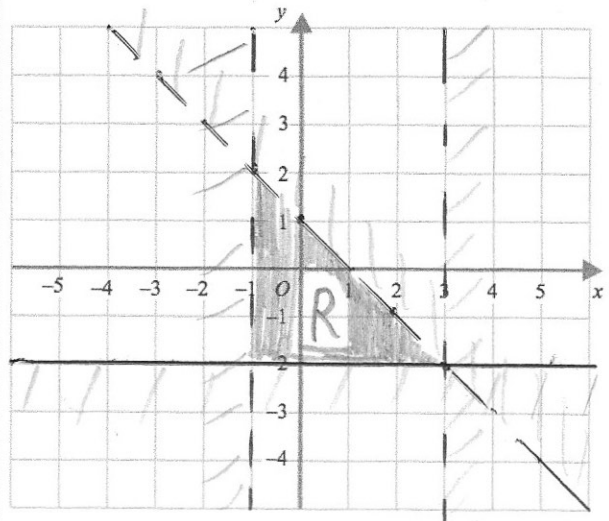


Show the region which satisfies

$$-1 < x < 3$$

$$y \geq -2$$

$$x + y < 1$$



$$\mathbf{b} = \begin{pmatrix} -5 \\ 6 \end{pmatrix}$$

Write down a vector parallel to  $\mathbf{b}$

$$\begin{pmatrix} -10 \\ 12 \end{pmatrix}$$

Solve, giving your answers to one decimal place.

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

$$a = 2$$

$$b = 3$$

$$c = -100$$

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

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

$$x = 6.4$$

or

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

$$x = -7.9$$

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

H varies directly to the cube of c.

When  $H = 40$ ,  $c = 2$ .  $H \propto c^3$

Express H in terms of c.  $H = kc^3$

$$H = 5c^3$$

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

$$40 = k \times 8$$

$$k = 5$$

Find the value of H when  $c = 5$ .

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

$$H = 625$$

Find the value of c when  $H = 5000$ .

$$5000 = 5c^3$$

$$1000 = c^3$$

$$c = 10$$