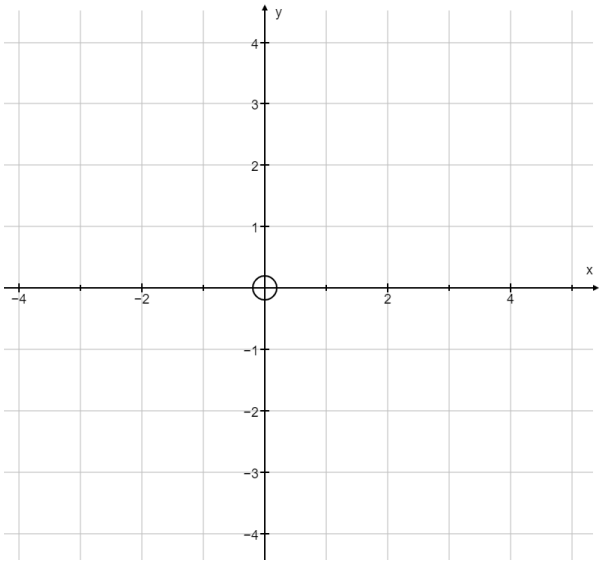
Pythagoras' Theorem with... Inequalities

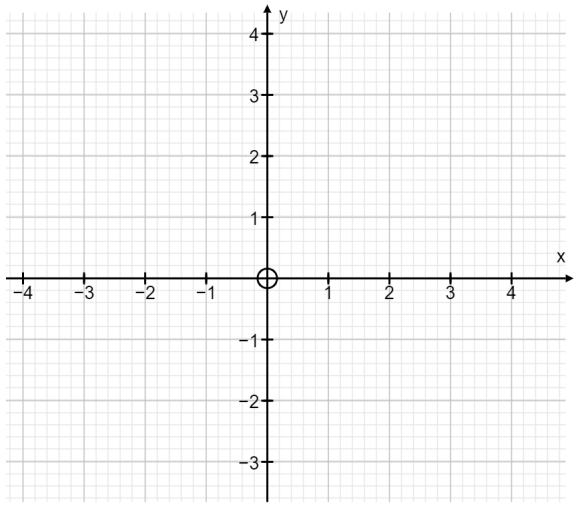
Identify the region described by the inequalities and calculate the perimeter of the region.

$$y \geq 1$$
$$x \geq 2$$
$$2y + x \leq 6$$



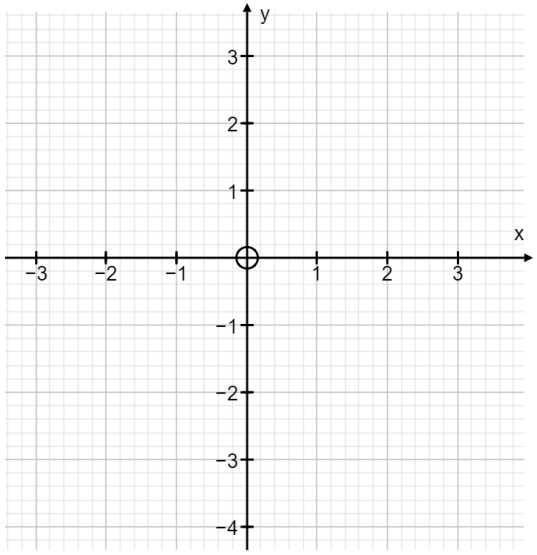
Perimeter:

$$y \geq 0$$
$$y \leq 1.5x$$
$$y \geq 3x - 9$$
$$y \leq 3$$



Perimeter:

$$y \leq 4x + 11$$
$$5y + 4x \leq 7$$
$$y \geq -1$$

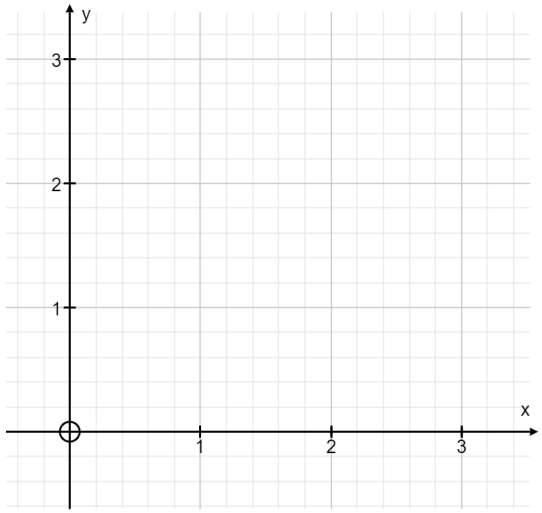


Perimeter:

Pythagoras' Theorem with... Inequalities

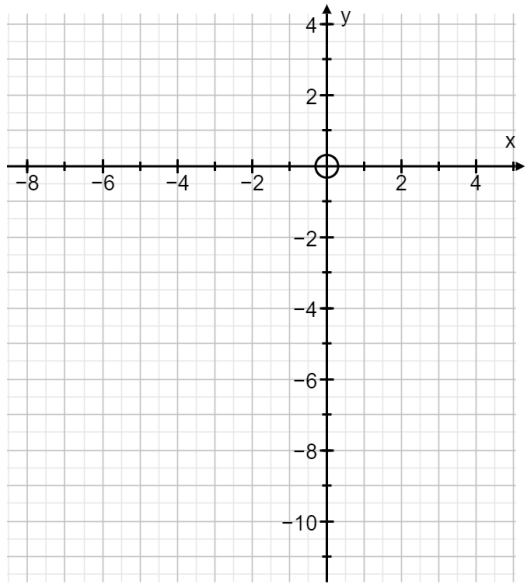
Identify the region described by the inequalities and calculate the perimeter of the region.

$$y \geq \frac{2}{3}x$$
$$y \leq 1.5x$$
$$x \leq 3$$
$$y \leq 3$$



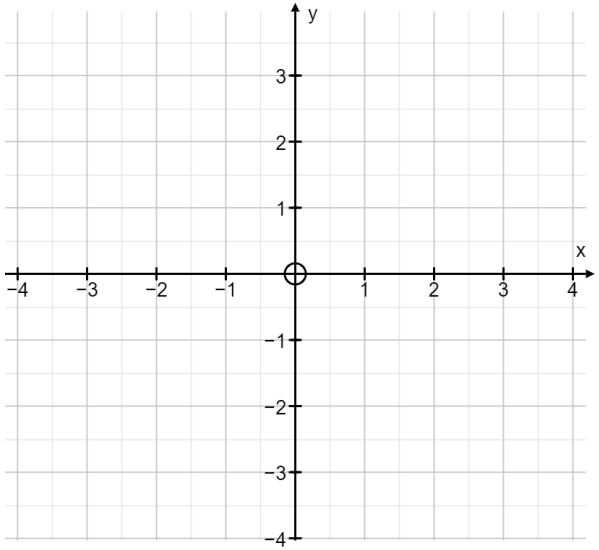
Perimeter:

$$2y + 2x \leq 7$$
$$2x - 2y \leq 7$$
$$2y - 4x \geq 7$$



Perimeter:

$$3y + x \leq 6$$
$$4x - 3y \leq 9$$
$$3y - x \leq 6$$
$$4x + 3y \geq -9$$

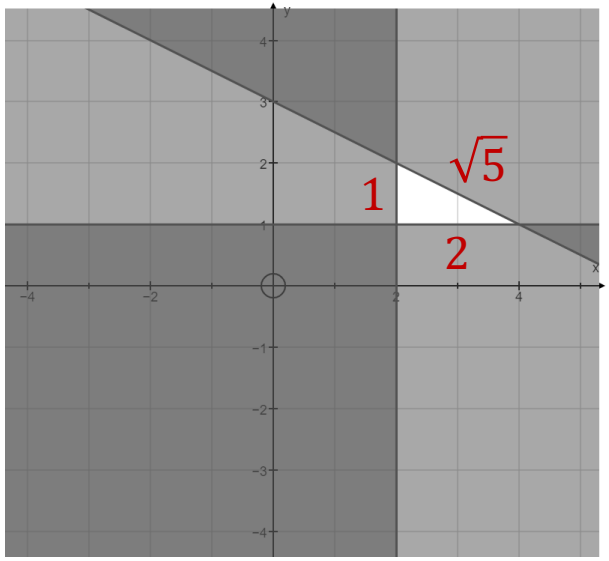


Perimeter:

Solutions

Identify the region described by the inequalities and calculate the perimeter of the region.

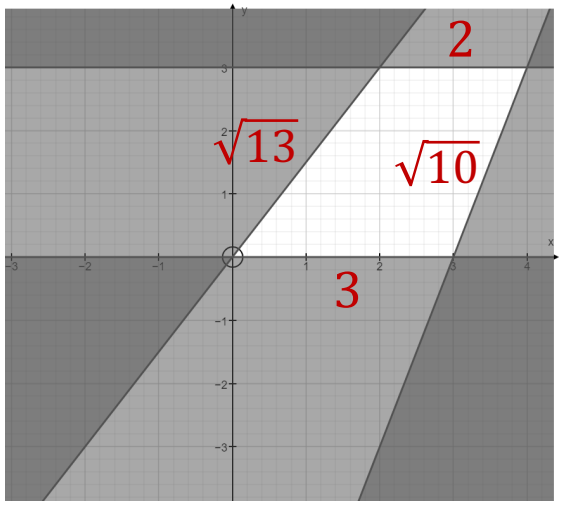
$$y \geq 1$$
$$x \geq 2$$
$$2y + x \leq 6$$



Perimeter:

$$1 + 2 + \sqrt{5}$$
$$= 3 + \sqrt{5}$$
$$= 5.24 \text{ (3 s.f.)}$$

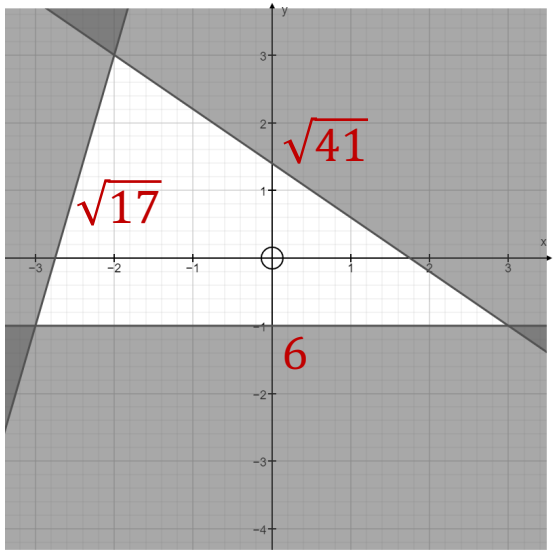
$$y \geq 0$$
$$y \leq 1.5x$$
$$y \geq 3x - 9$$
$$y \leq 3$$



Perimeter:

$$2 + 3 + \sqrt{10} + \sqrt{13}$$
$$= 11.8 \text{ (3 s.f.)}$$

$$y \leq 4x + 11$$
$$5y + 4x \leq 7$$
$$y \geq -1$$



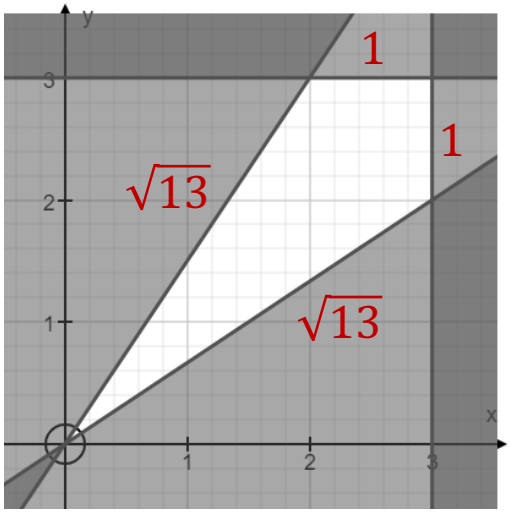
Perimeter:

$$6 + \sqrt{17} + \sqrt{41}$$
$$= 16.5 \text{ (3 s.f.)}$$

Solutions

Identify the region described by the inequalities and calculate the perimeter of the region.

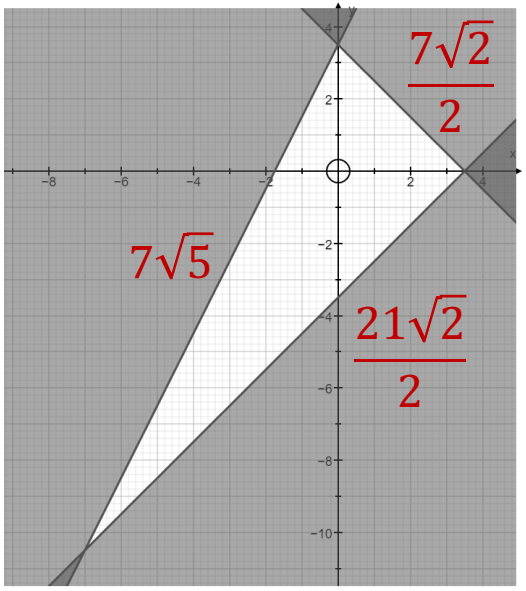
$$y \geq \frac{2}{3}x$$
$$y \leq 1.5x$$
$$x \leq 3$$
$$y \leq 3$$



Perimeter:

$$1 + 1 + \sqrt{13} + \sqrt{13}$$
$$= 2 + 2\sqrt{13}$$
$$= 9.21 \text{ (3 s.f.)}$$

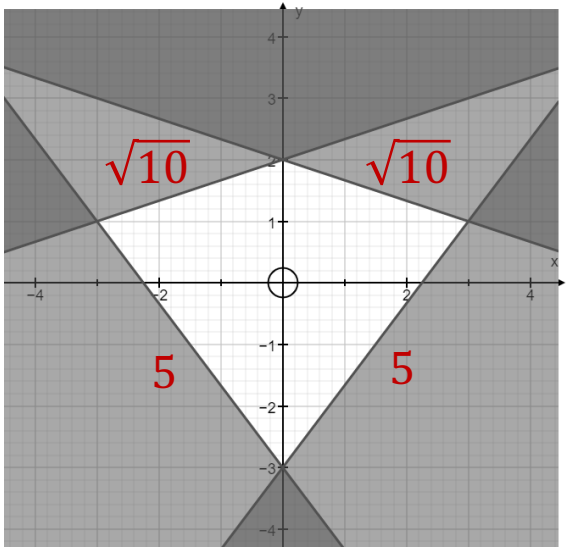
$$2y + 2x \leq 7$$
$$2x - 2y \leq 7$$
$$2y - 4x \geq 7$$



Perimeter:

$$\frac{7\sqrt{2}}{2} + \frac{21\sqrt{2}}{2} + 7\sqrt{5}$$
$$= 14\sqrt{2} + 7\sqrt{5}$$
$$= 35.5 \text{ (3 s.f.)}$$

$$3y + x \leq 6$$
$$4x - 3y \leq 9$$
$$3y - x \leq 6$$
$$4x + 3y \geq -9$$



Perimeter:

$$\sqrt{10} + \sqrt{10} + 5 + 5$$
$$= 2\sqrt{10} + 10$$
$$= 16.3 \text{ (3 s.f.)}$$