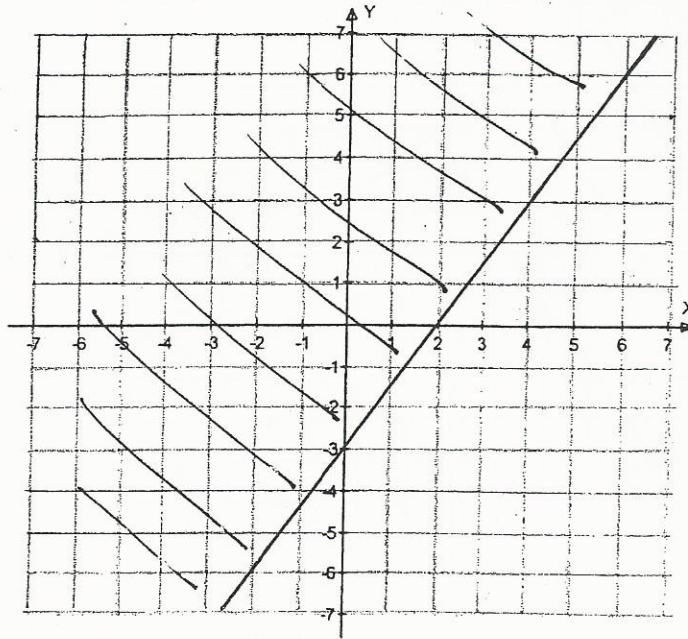


Answers

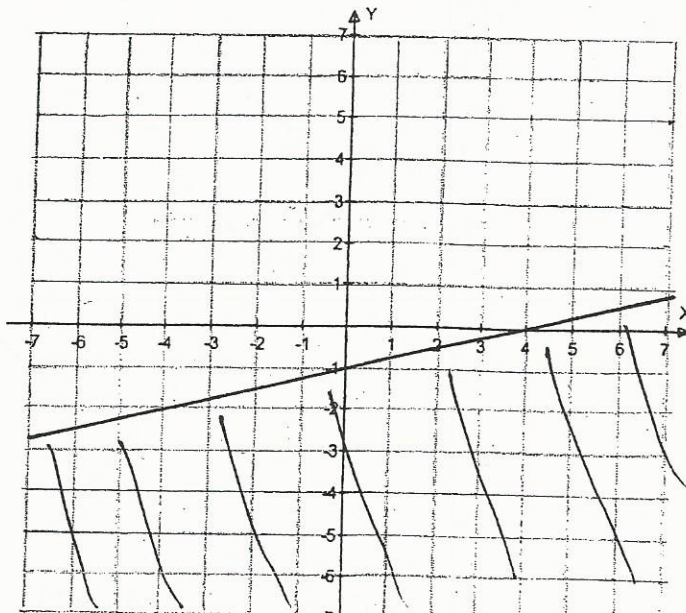
Relations Question Type B

e.g. 1 Use set-builder notation to define the relation illustrated below.

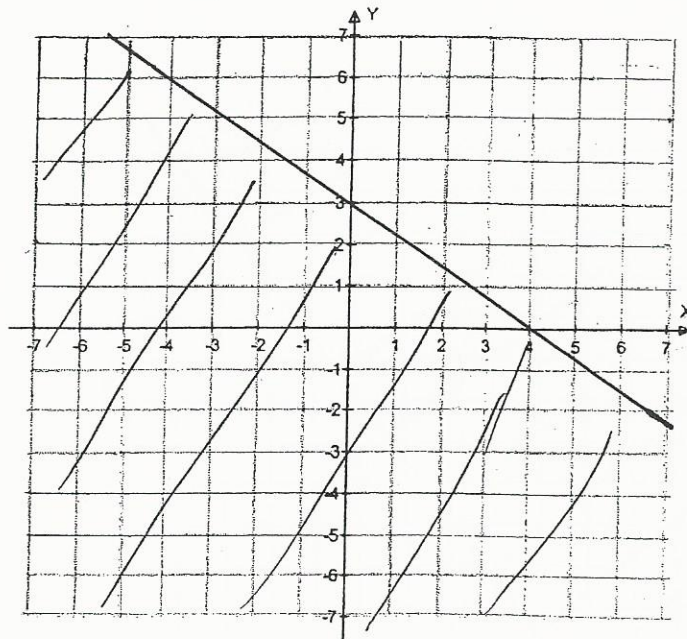


You try:

1. Use set-builder notation to define the relation illustrated below.



2. Use set-builder notation to define the relation illustrated below.



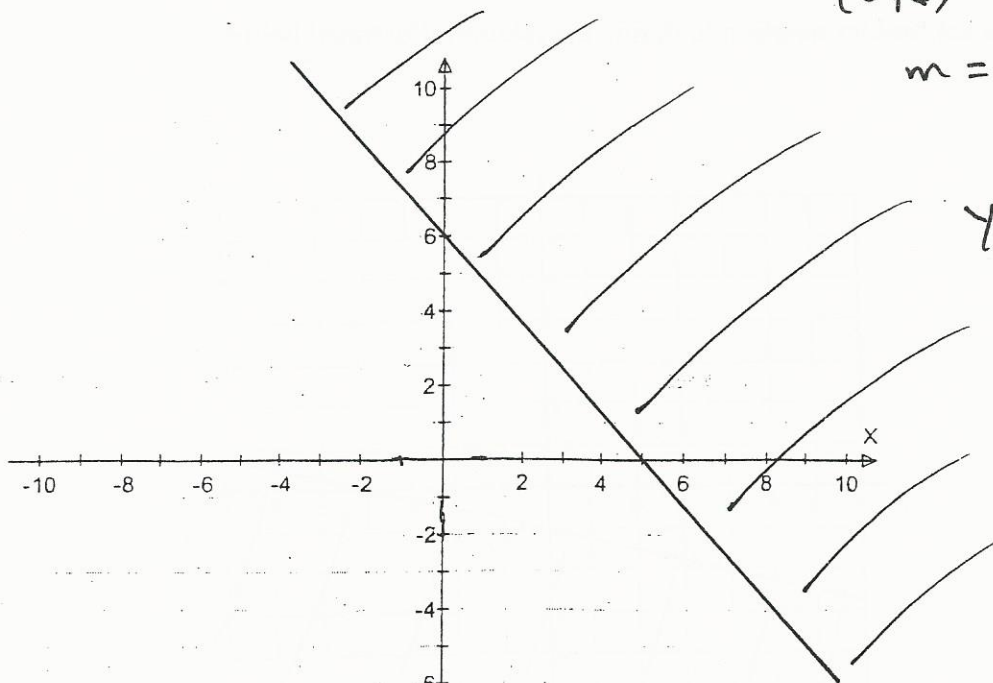
$$(0, 3) \quad (4, 0)$$

$$m = \frac{0 - 3}{4 - 0} = -\frac{3}{4}$$

$$y = -\frac{3}{4}x + 3$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \leq -\frac{3}{4}x + 3\}$$

3. Use set-builder notation to define the relation illustrated below.



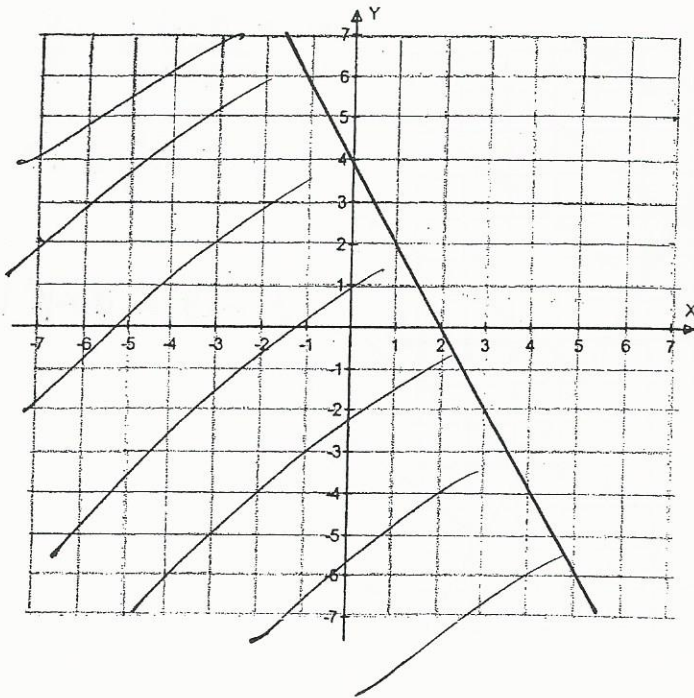
$$(0, 6) \quad (5, 0)$$

$$m = \frac{0 - 6}{5 - 0} = -\frac{6}{5}$$

$$y = -\frac{6}{5}x + 6$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \geq -\frac{6}{5}x + 6\}$$

4. Use set-builder notation to define the relation illustrated below.



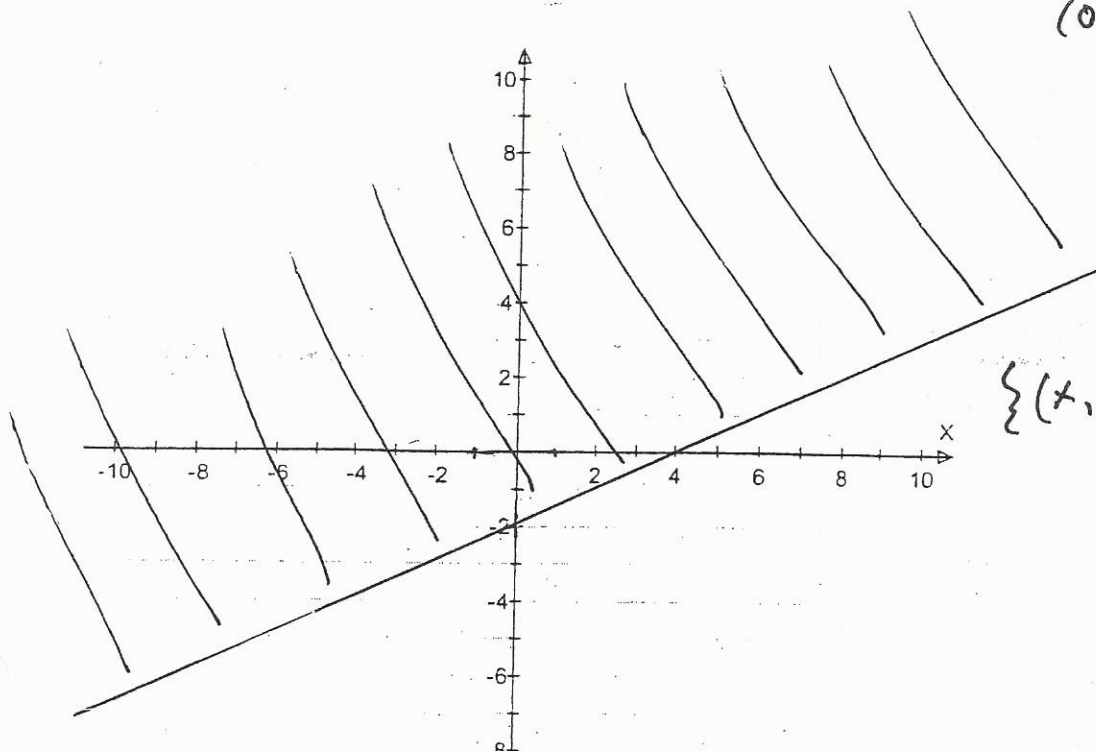
$$(0, 4) \quad (2, 0)$$

$$m = \frac{0 - 4}{2 - 0} = \frac{-4}{2} = -2$$

$$y = -2x + 4$$

$$\{(x, y) \in \mathbb{R} \mid y \leq -2x + 4\}$$

5. Use set-builder notation to define the relation illustrated below.



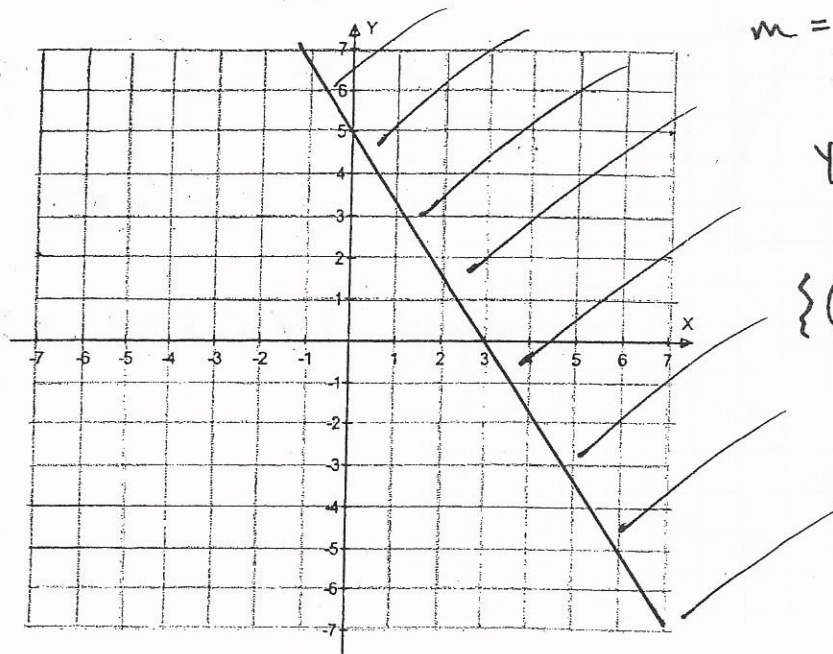
$$(0, -2) \quad (4, 0)$$

$$m = \frac{0 + 2}{4 - 0} = \frac{2}{4} = \frac{1}{2}$$

$$y = \frac{1}{2}x - 2$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \geq \frac{1}{2}x - 2\}$$

6. Use set-builder notation to define the relation illustrated below.



$$(0, 5) \quad (3, 0)$$

$$m = \frac{0-5}{3-0} = -\frac{5}{3}$$

$$y = -\frac{5}{3}x + 5$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \geq -\frac{5}{3}x + 5\}$$

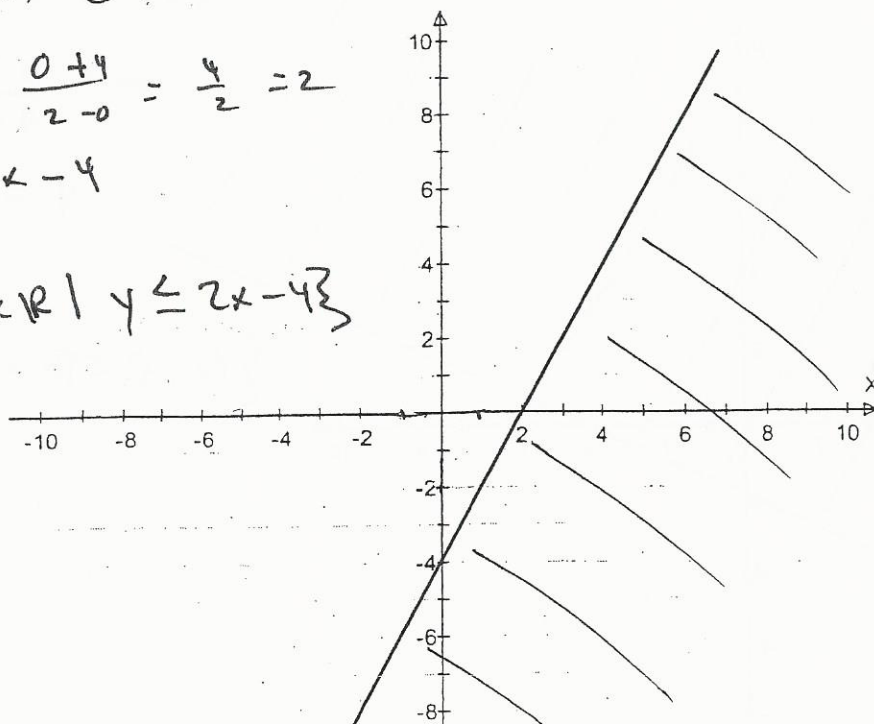
7. Use set-builder notation to define the relation illustrated below.

$$(0, -4) \quad (2, 0)$$

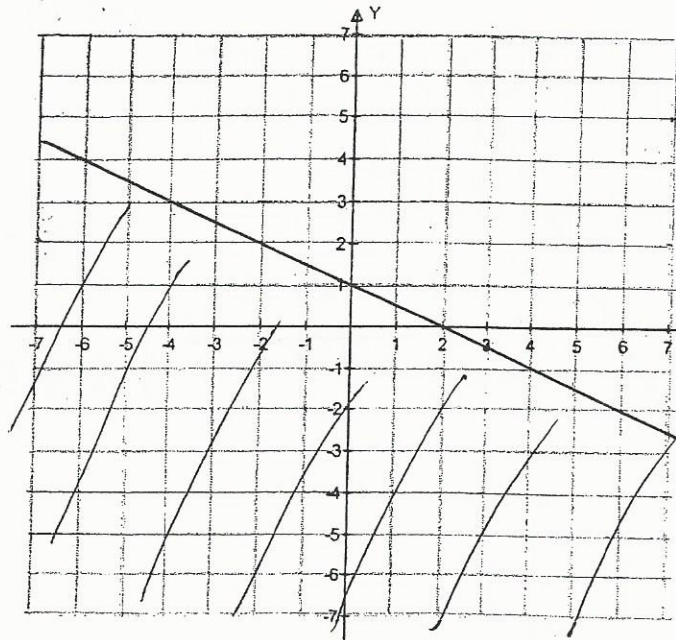
$$m = \frac{0+4}{2-0} = \frac{4}{2} = 2$$

$$y = 2x - 4$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \leq 2x - 4\}$$



8. Use set-builder notation to define the relation illustrated below.



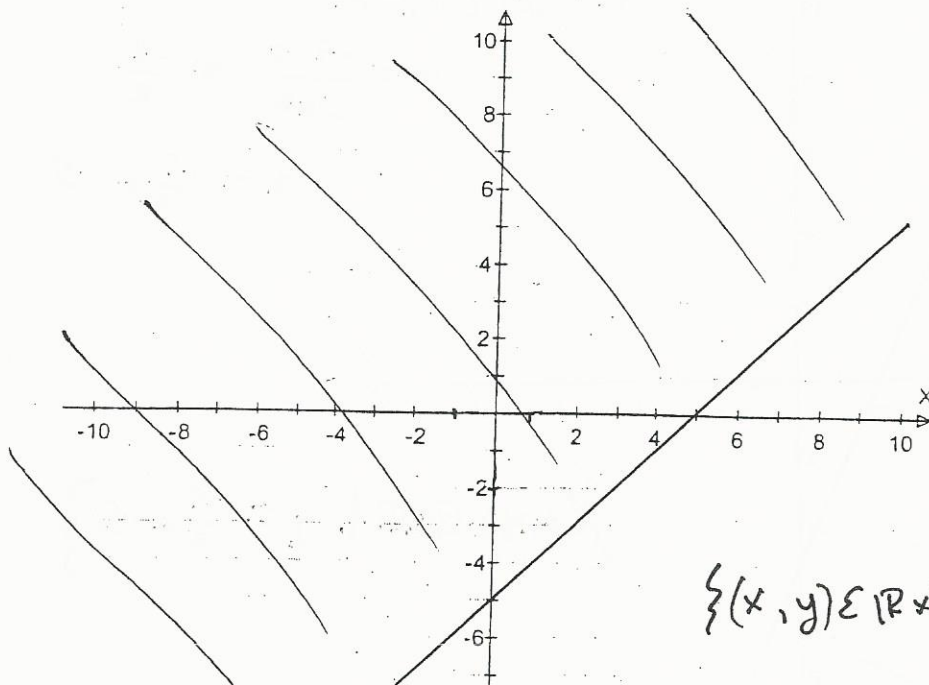
$$(0, 1) \quad (2, 0)$$

$$m = \frac{0 - 1}{2 - 0} = -\frac{1}{2}$$

$$y = -\frac{1}{2}x + 1$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \leq -\frac{1}{2}x + 1\}$$

9. Use set-builder notation to define the relation illustrated below.



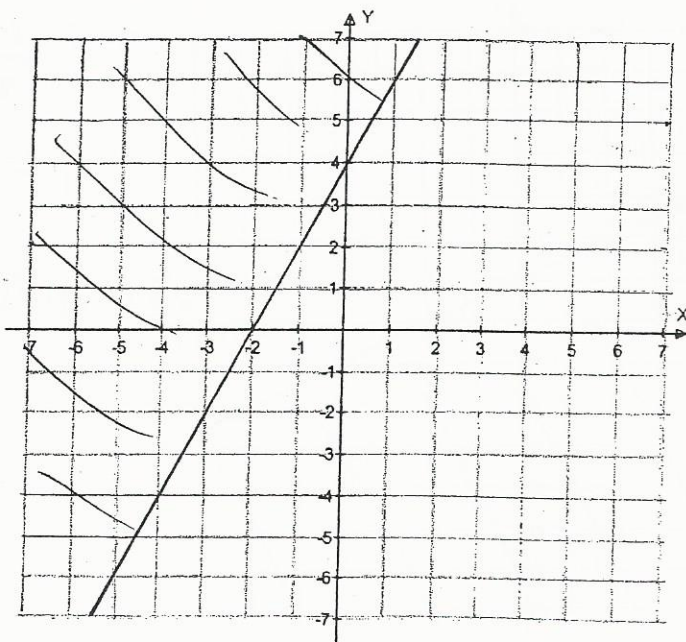
$$(0, -5) \quad (5, 0)$$

$$m = \frac{0 + 5}{5 - 0} = \frac{5}{5} = 1$$

$$y = x - 5$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \geq x - 5\}$$

10. Use set-builder notation to define the relation illustrated below.



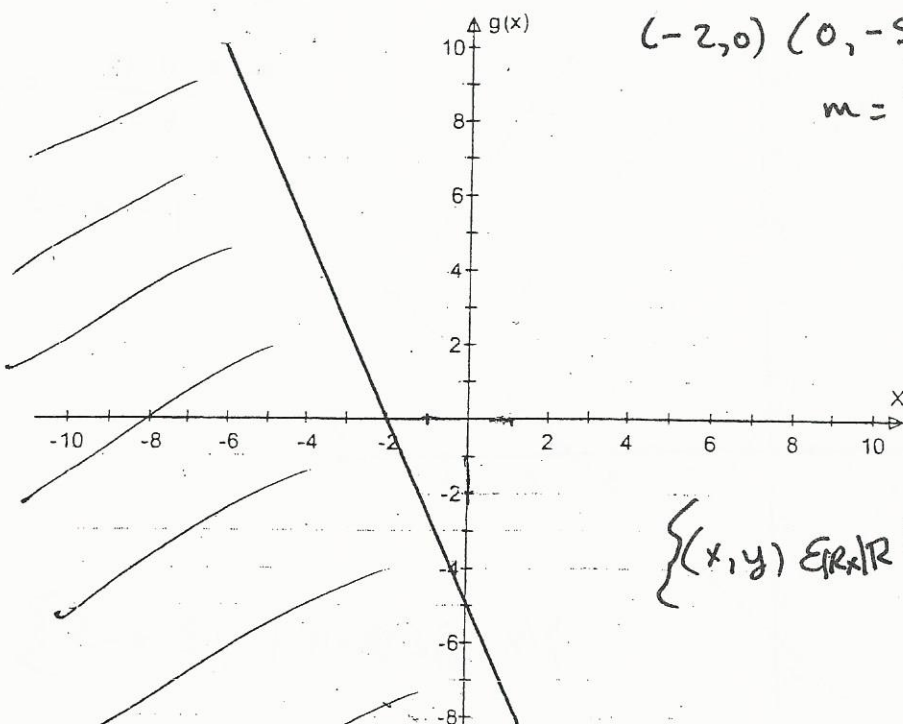
$$(-2, 0) \quad (0, 4)$$

$$m = \frac{4 - 0}{0 - (-2)} = \frac{4}{2} = 2$$

$$y = 2x + 4$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \geq 2x + 4\}$$

11. Use set-builder notation to define the relation illustrated below.



$$(-2, 0) \quad (0, -5)$$

$$m = \frac{-5 - 0}{0 - (-2)} = \frac{-5}{2}$$

$$y = -\frac{5}{2}x - 5$$

$$\{(x, y) \in \mathbb{R} \times \mathbb{R} \mid y \leq -\frac{5}{2}x - 5\}$$