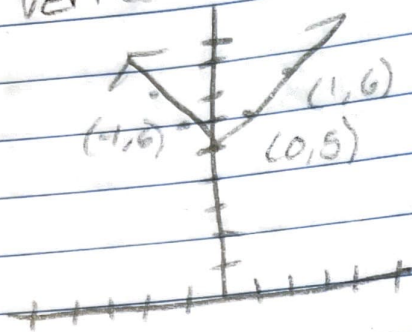
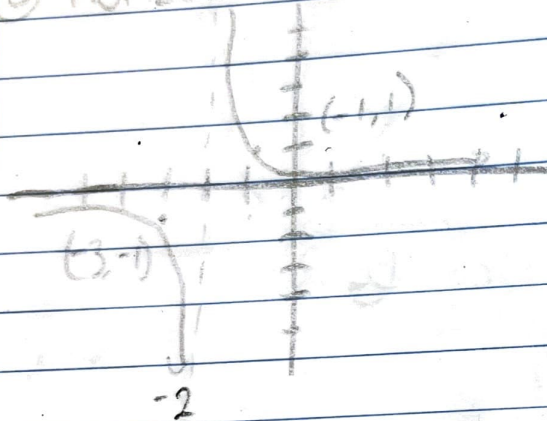


2.8

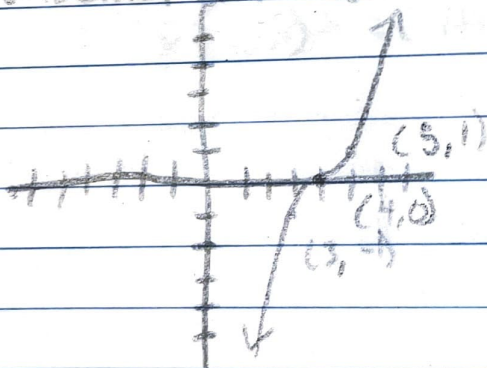
① (a) Vertical shift up 5



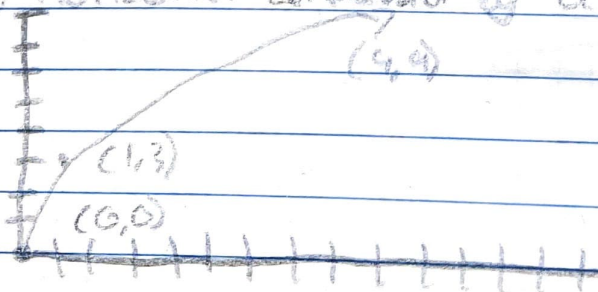
② Horizontal shift left 2



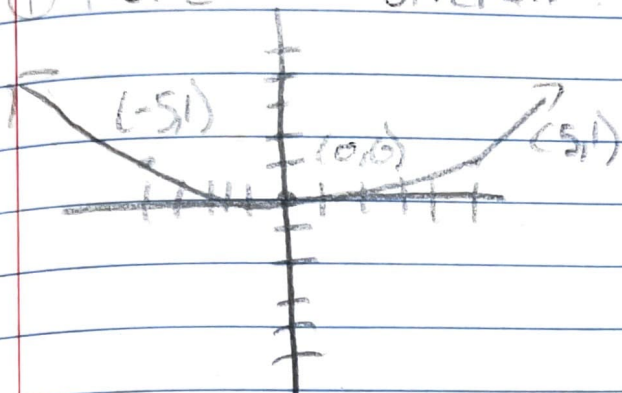
③ Horizontal shift right 4 units



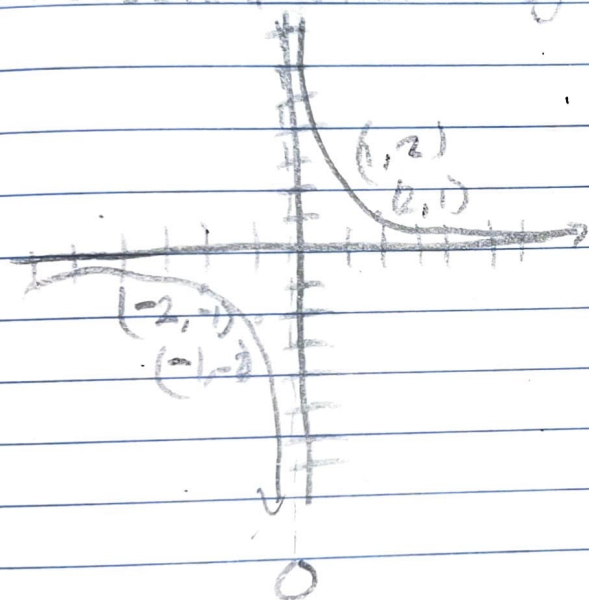
④ Horizontal compression by a factor of 9



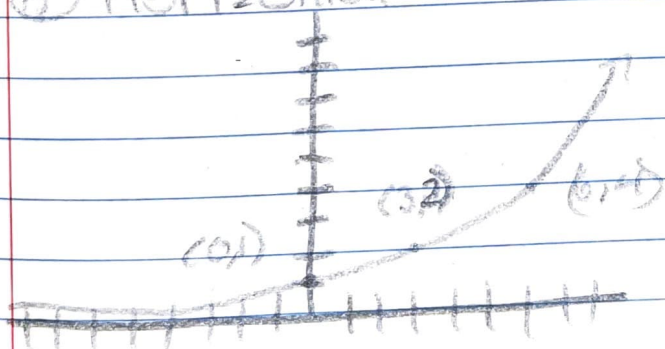
(i) Horizontal stretch by a factor of 5



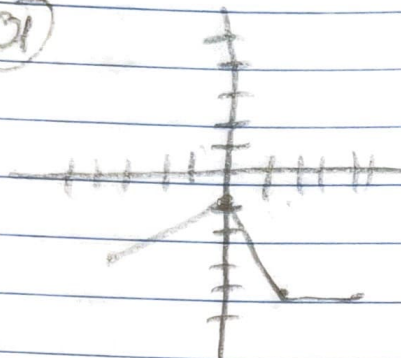
(ii) Horizontal stretch by a factor of 2



(iii) Horizontal stretch by a factor of  $\frac{1}{3}$



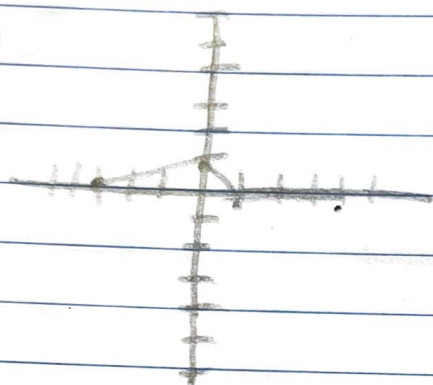
(4) (a)



$$\{x | -3 \leq x \leq 4\}$$

$$\{y | -4 \leq y \leq -1\}$$

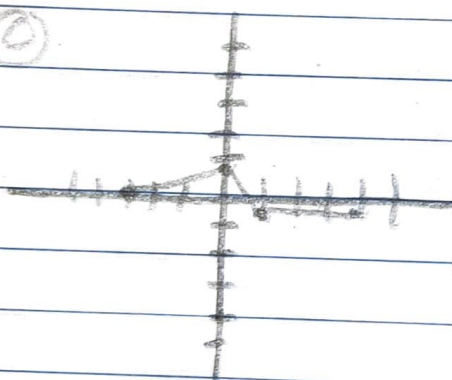
(b)



$$\{x | -3 \leq x \leq 4\}$$

$$\{y | -\frac{1}{2} \leq y \leq \frac{2}{3}\}$$

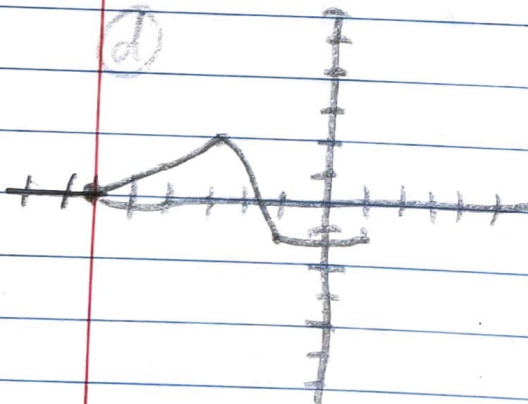
(c)



$$\{x | -3 \leq x \leq 4\}$$

$$\{y | -\frac{1}{2} \leq y \leq \frac{2}{3}\}$$

(d)

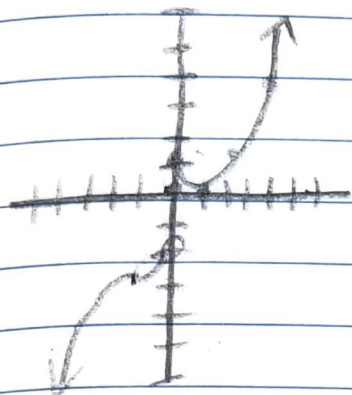


$$\{x | -6 \leq x \leq 1\}$$

$$\{y | -1 \leq y \leq 2\}$$



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⑥ ①  $\{x \mid x \in \mathbb{R}\}$   
②  $\{y \mid y > 5\}$

⑦ ①  $\{x \mid x \in \mathbb{R}\}$   
②  $\{y \mid y \geq 3\}$

⑧ ①  $\{x \mid x \in \mathbb{R} \text{ and } x \neq -4\}$   
②  $\{y \mid y \in \mathbb{R} \text{ and } y \neq 0\}$

⑨ ①  $\{x \mid x \in \mathbb{R}\}$   
②  $\{y \mid y > 0\}$