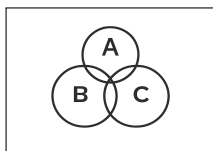
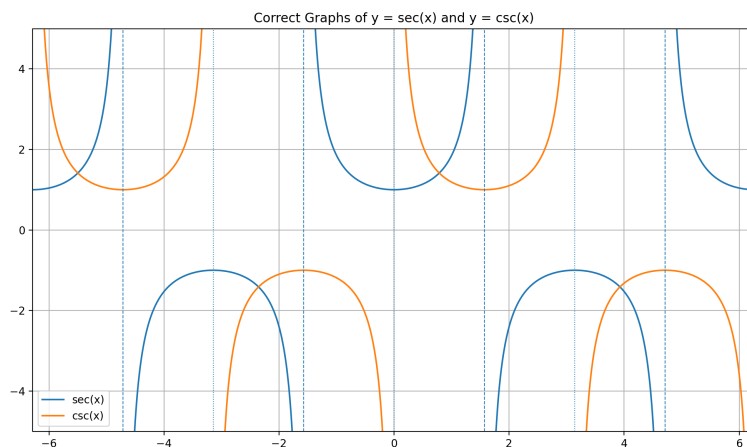
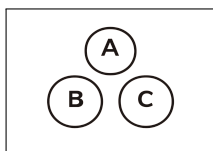


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Facts and Properties Range

C



$$y = \sec(\theta) = 1/\cos(\theta)$$

$$\text{Dom}(y) \rightarrow \cos(\theta) = 0 \rightarrow \theta \neq \pi/2 + n\pi$$

$$\text{Range}(y) \rightarrow -1 < \sec(\theta) < 1$$

$$y = \csc(\theta) = 1/\sin(\theta)$$

$$\text{Dom}(y) \rightarrow \sin(\theta) = 0 \rightarrow \theta \neq n\pi$$

$$\text{Range}(y) \rightarrow -1 < \csc(\theta) < 1$$



$$y = -4 \sec(\theta/2 + \pi/6) + 2$$

$$\text{Range}(y) = ?$$

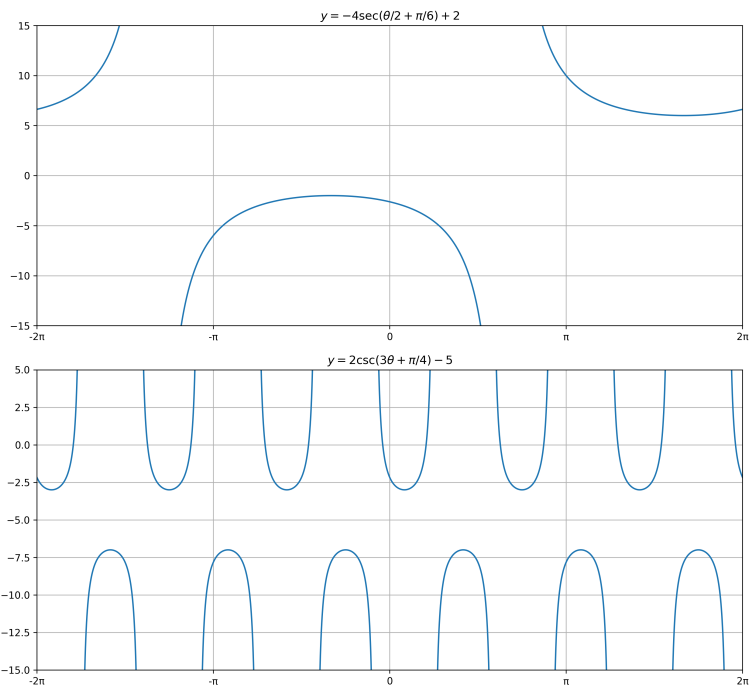
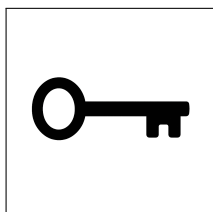
$$y = 2 \csc(3\theta + \pi/4) - 5$$

$$\text{Range}(y) = ?$$

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Facts and Properties Range

C



$$y = -4\sec(\theta/2 + \pi/6) + 2$$

$$y = a\sec(b\theta - c) + d$$

$$\text{Range}(y) = (-\infty, d - |a|) \cup (d + |a|, \infty) = (-\infty, -2) \cup (6, \infty)$$

$$y = 2\csc(3\theta + \pi/4) - 5$$

$$y = a\csc(b\theta - c) + d,$$

$$\text{Range}(y) = (-\infty, d - |a|) \cup (d + |a|, \infty) = (-\infty, -7) \cup (-3, \infty)$$