**1.*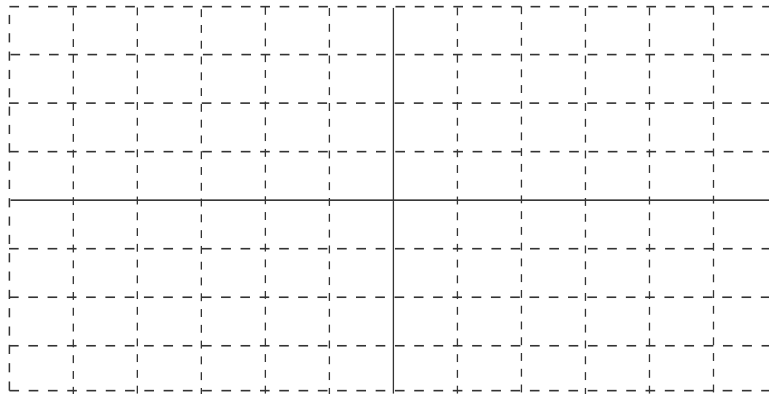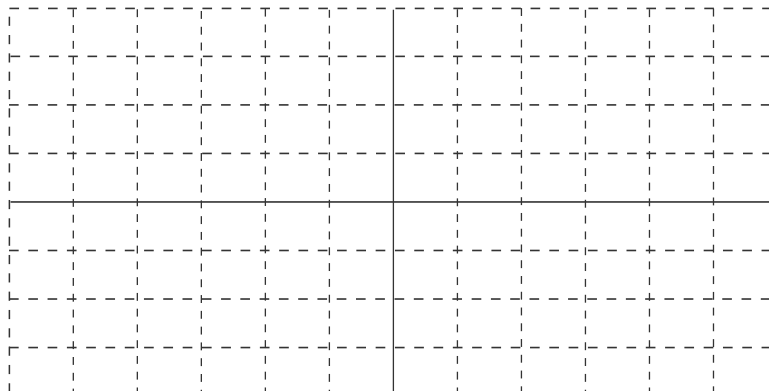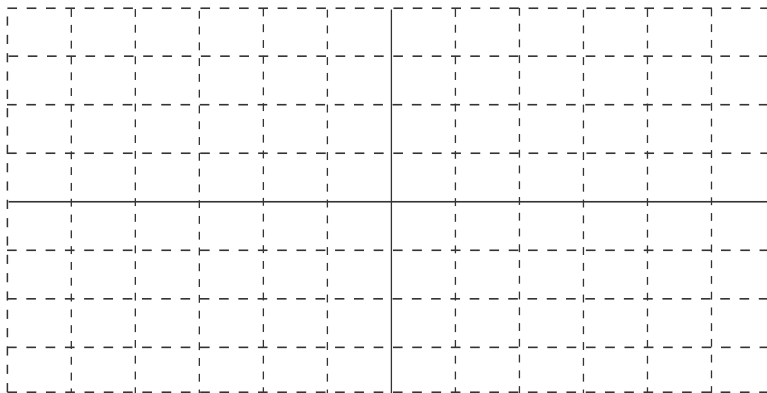* A grandfather clock has a pendulum with a length of 3 feet that swings through an angle of 30 degrees. What is the area that the pendulum swings through in square feet? (Leave your answer in exact form.)(2pts)

2. Sketch the graph of $y = \cot(2x)$. (4pts)

3. Sketch the graph of $y = 2 \sec\left(x - \dfrac{\pi}{2}\right)$. (4pts)

3. Sketch the graph of $y = 2 \sec\left(x - \dfrac{\pi}{2}\right)$. (4pts)