249
108

$$\sin 2x\sin 3x - \cos 2x\cos 3x > \sin 10x$$

$$-\cos 5x > 2\sin 5x\cos 5x$$

$$\cos 5x(1+2\sin 5x) < 0$$

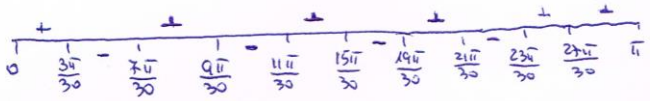
$$5x = \frac{\pi}{2} + \pi k$$

$$x = \frac{\pi}{10} + \frac{\pi k}{5}$$

$$\sin 5x = -\frac{1}{2}$$

$$5x = -\frac{\pi}{6} + 2\pi k \qquad 5x = -\frac{5\pi}{6} + 2\pi k$$

$$x = -\frac{\pi}{30} + \frac{2\pi k}{5} \qquad x = \frac{7\pi}{30} + \frac{2\pi k}{5}$$



$$\frac{12\pi}{30}k + \frac{\pi}{10} < x < \frac{7\pi}{30} + \frac{12\pi}{30}k$$

$$\frac{12\pi}{30}k + \frac{9\pi}{30} < x < \frac{11\pi}{30} + \frac{12\pi}{30}k$$

$$\rightarrow \quad \boxed{\begin{array}{l} \frac{2\pi k}{5} + \frac{\pi}{10} < x < \frac{7\pi}{30} + \frac{2\pi k}{5} \\ \frac{2\pi k}{5} + \frac{9\pi}{30} < x < \frac{11\pi}{30} + \frac{2\pi k}{5} \end{array}}$$