Question
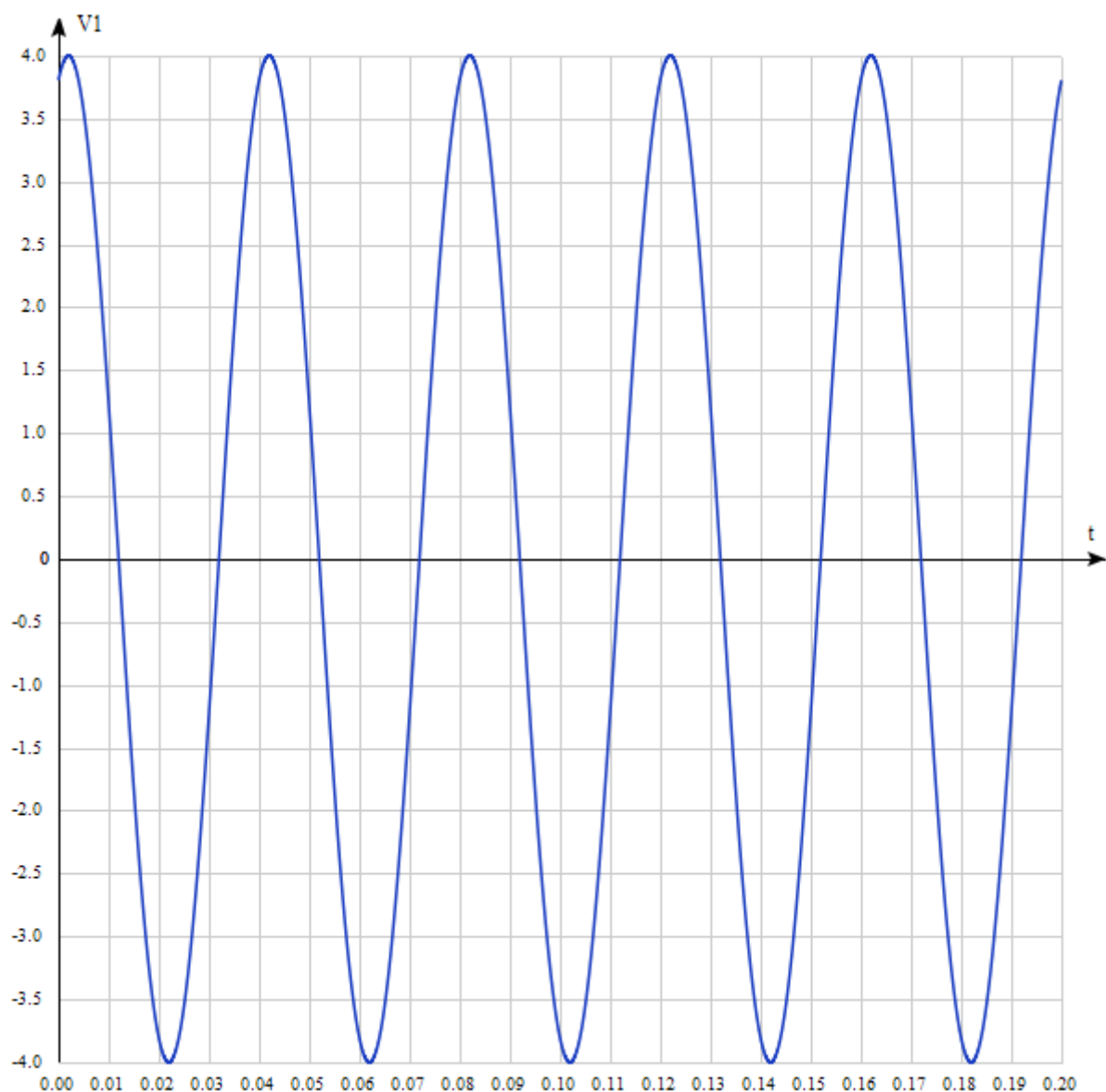
Graphically show the following sinusoidal waves and their combination when added together:

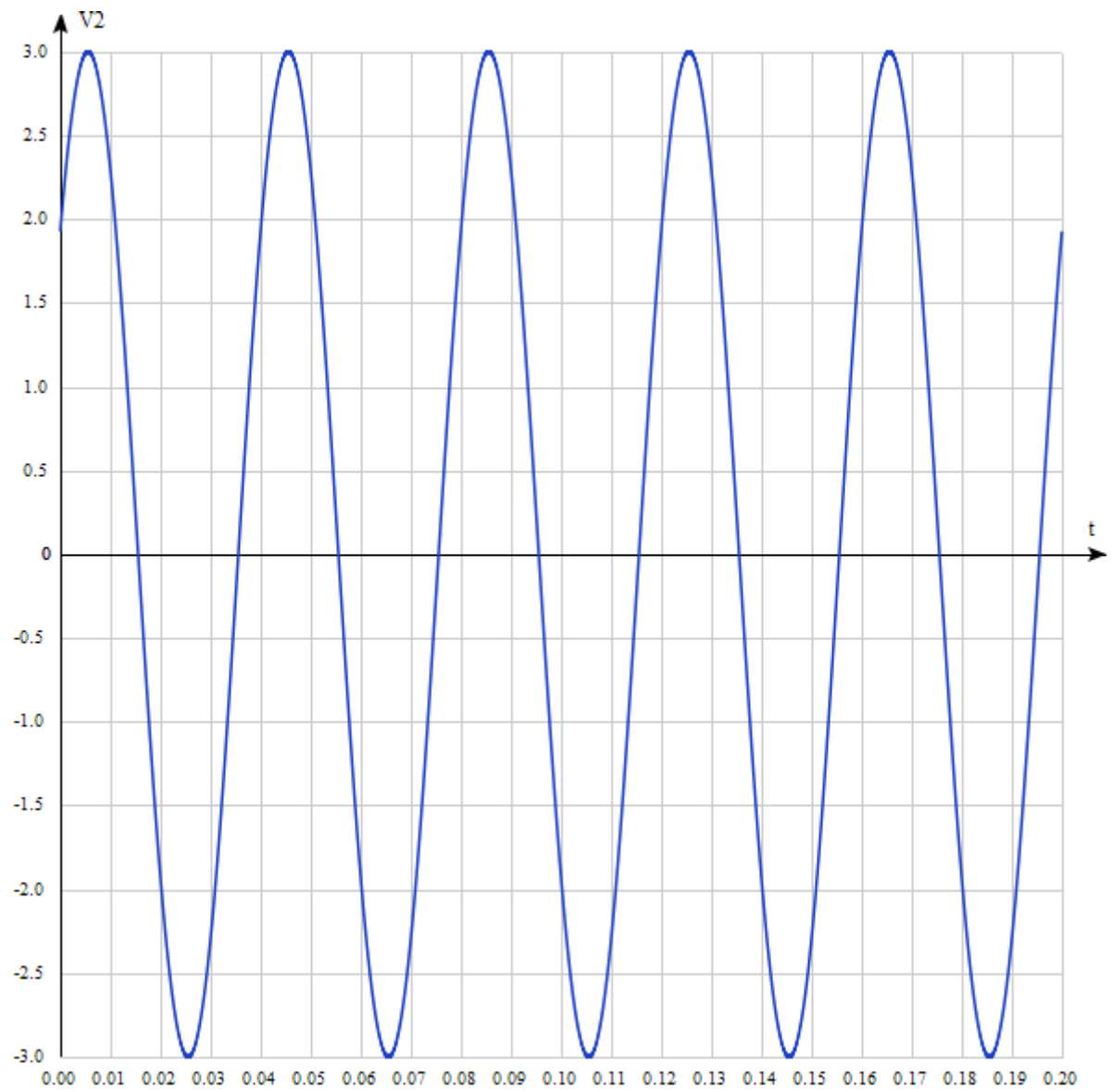V1= 4sin(50πt+2π/5), V2= 3sin(50πt+2π/9).

Plot the graph over t=0 to t=0.2.

Solution
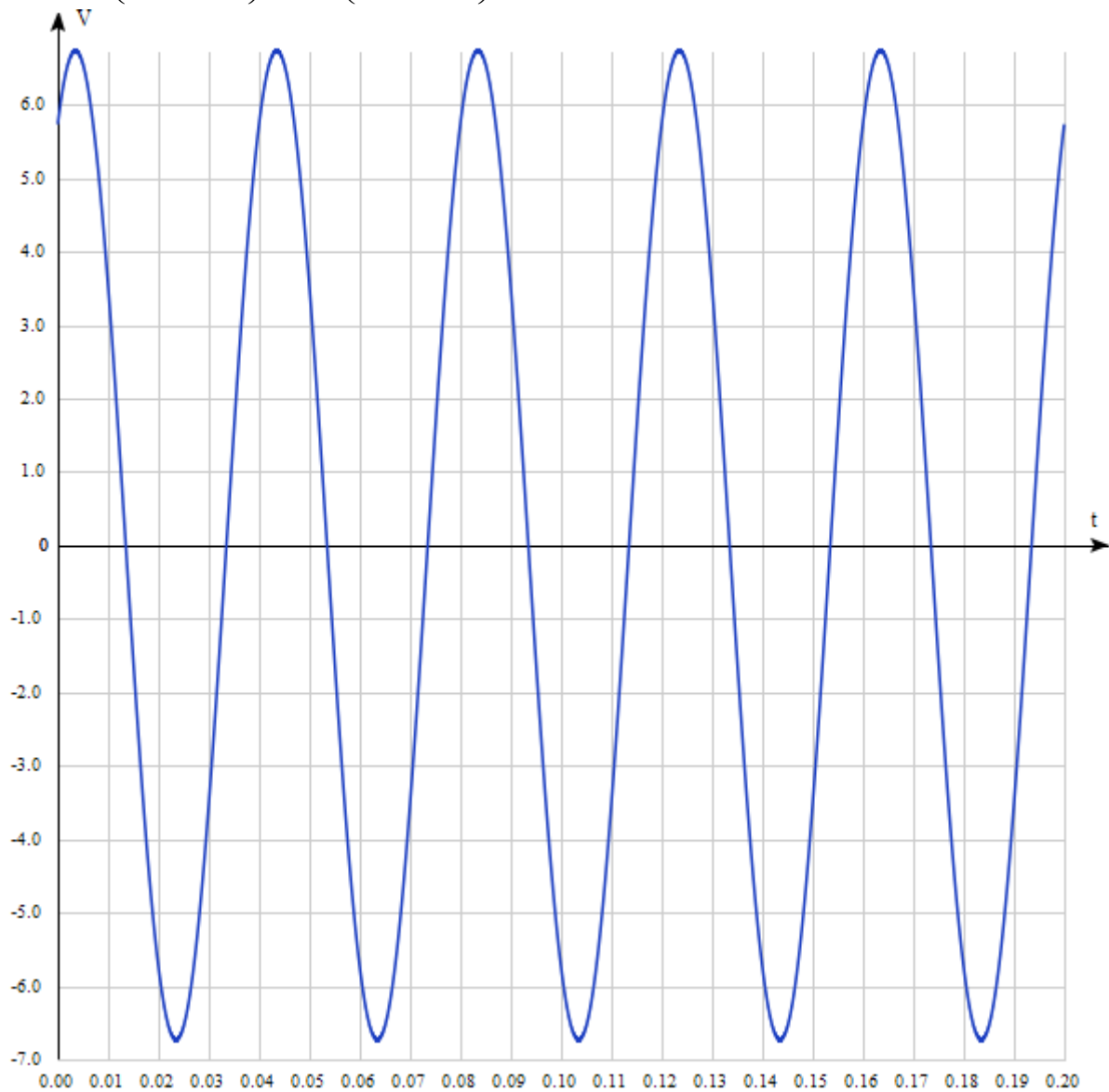
$$v1 = 4\sin\left(50\pi t + \frac{2\pi}{5}\right)$$

Fig. 1 Plot of $v1 = 4\sin\left(50\pi t + \frac{2\pi}{5}\right)$

$$v2 = 3\sin\left(50\pi t + \frac{2\pi}{9}\right)$$

Fig. 2 Plot of $v2 = 3\sin\left(50\pi t + \frac{2\pi}{9}\right)$

$$v = 4\sin\left(50\pi t + \frac{2\pi}{5}\right) + 3\sin\left(50\pi t + \frac{2\pi}{9}\right)$$

Fig. 3 Plot of $v = 4\sin\left(50\pi t + \frac{2\pi}{5}\right) + 3\sin\left(50\pi t + \frac{2\pi}{9}\right)$