

Wave Equation

All solutions between 0 and 360 degrees

1. a) Write $6\cos x + 5\sin x$ in the form $k\cos(x - \alpha)$.

Hence solve the equation $6\cos x + 5\sin x = 4.5$

b) Write $3\cos x + \sin x$ in the form $k\cos(x - \alpha)$.

Hence solve the equation $3\cos x + \sin x = 2$

2. a) Write $2\cos x + 3\sin x$ in the form $k\sin(x + \alpha)$.

Hence solve the equation $2\cos x + 3\sin x = 3.2$

b) Write $7\cos x + 4\sin x$ in the form $k\sin(x + \alpha)$.

Hence solve the equation $7\cos x + 4\sin x = -5$.

3. a) Write $-2\cos x + 4\sin x$ in the form $k\sin(x - \alpha)$.

Hence solve the equation $-2\cos x + 4\sin x = -3$

b) Write $-8\cos x + 5\sin x$ in the form $k\sin(x - \alpha)$.

Hence solve the equation $-8\cos x + 5\sin x = 6$

4. a) Write $4\cos x - 3\sin x$ in the form $k\cos(x + \alpha)$.

Hence solve the equation $4\cos x - 3\sin x = 2$

b) Write $2\cos x - \sin x$ in the form $k\cos(x + \alpha)$.

Hence solve the equation $2\cos x - \sin x = 1$