Practice worksheet | Further trigonometry

Expressing a sine/cosine combination as one sinusoid

Name: _____ Date: _____

6 questions | 12 marks

1. Find the amplitude of $\sin x + \cos x$. [2 marks]

2. Write $\sin x + \cos x$ as a single sine. [2 marks]

3. Write $4\sin x - 3\cos x$ as $R\sin(x + \phi)$ with $-\pi/2 < \phi < 0$. [2 marks]

4. Find the range of $2 + \sqrt{3}\sin x + \cos x$. [2 marks]

5. Solve $\sin x + \cos x = 0$ on $[0, 2\pi)$. [2 marks]

6. Why does the method not generally combine $a\sin x + b\cos 2x$ into one sine? [2 marks]