$2 \sin A + 3 \cos A = 2$
Prove that:
$3 \sin A - 2 \cos A = \pm 3$

Proof:

$2 \sin A + 3 \cos A = 2$

Squaring both sides:

$4 \sin^2 A + 12 \sin A \cos A + 9 \cos^2 A = 4$

Using the identity:

$\sin^2 A + \cos^2 A = 1$

$4(1 - \cos^2 A) + 12 \sin A \cos A + 9(1 - \sin^2 A) = 4$

Expanding:

$4 - 4 \cos^2 A + 12 \sin A \cos A + 9 - 9 \sin^2 A = 4$

$4 \cos^2 A - 12 \sin A \cos A + 9 \sin^2 A = 9$

$(3 \sin A - 2 \cos A)^2 = 9$

So

$3 \sin A - 2 \cos A = \pm 3$