**7E** $RCos\left(x\pm α\right) \& RSin\left(x\pm α\right)$

1. Show that:

$$3sinx+4cosx$$

Can be expressed in the form:

$Rsin(x+α)$

$$R>0 $$

$$0°<α<90°$$

1. Show that you can express:

$$sinx-\sqrt{3}cosx$$

In the form:

$Rsin(x-α)$

$$R>0 $$

$$0<α<\frac{π}{2}$$

Quick Shortcuts and patterns:

Key point: This skill helps us reduce two trigonometric functions with the same angle that are being summed together to one single trigonometric function.

Where could this skill be useful?

1. Express:

$$2cosθ+5sinθ$$

in the form:

$Rcos(x-α)$

$$R>0 $$

$0°<α<90°$

1. Hence, solve $2cosθ+5sinθ=3$, $0°<θ<360°$