

THIS IS A NO CALCULATOR QUIZ

[4 POINTS] Solve the equation $2\sin^2 x - 3\sin x - 2 = 0$.

[3 POINTS] If $\sin x = \frac{3}{5}$ and $\cos y = -\frac{12}{13}$, and both x and y are in Quadrant 2, find the value of $\cos(x - y)$.

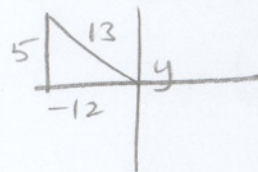
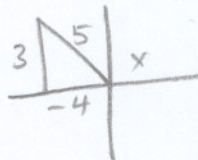
$$(2\sin x + 1)(\sin x - 2) = 0$$

$$\sin x = -\frac{1}{2} \text{ or } 2$$

↑ IMPOSSIBLE

$$x = \frac{7\pi}{6} + 2n\pi \text{ or } \frac{11\pi}{6} + 2n\pi$$

$\frac{1}{2} \quad \frac{1}{2} \quad \frac{1}{2} \quad \frac{1}{2}$



$$\begin{aligned} \cos(x - y) &= \cos x \cos y + \sin x \sin y \\ &= \left(-\frac{4}{5}\right)\left(-\frac{12}{13}\right) + \left(\frac{3}{5}\right)\left(\frac{5}{13}\right) \\ &= \frac{48}{65} + \frac{15}{65} \\ &= \frac{63}{65} \end{aligned}$$

[1 POINTS] Write $\cos 5x \sin 7x - \cos 7x \sin 5x$ as the sine, cosine or tangent of an angle.

[2 POINTS]

Solve the equation $\cos \frac{x}{2} = -\frac{1}{2}$.

$$\begin{aligned} &\sin(7x - 5x) \\ &= \sin 2x \end{aligned}$$

$\frac{1}{2} \quad \frac{1}{2}$

$$\begin{aligned} \frac{x}{2} &= \frac{2\pi}{3} + 2n\pi \text{ or } \frac{4\pi}{3} + 2n\pi \\ x &= \frac{4\pi}{3} + 4n\pi \text{ or } \frac{8\pi}{3} + 4n\pi \end{aligned}$$

$\frac{1}{2} \quad \frac{1}{2}$