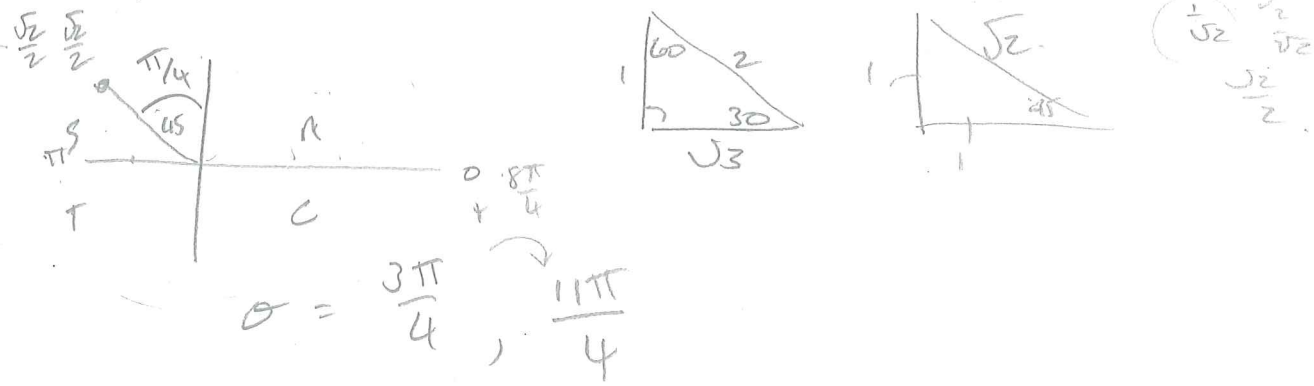
Question 7 **(3 marks)**

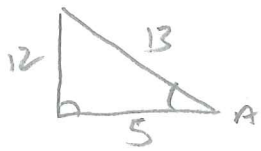
Point M lies on the unit circle with centre O so that the anticlockwise angle measured from the positive x-axis to the line OM is θ, where $0 \leq \theta \leq 3\pi$. Determine the size of θ when M has coordinates $(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2})$.

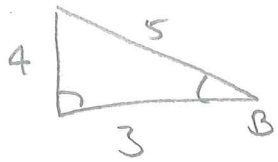


$\theta = \frac{3\pi}{4}, \frac{11\pi}{4}$

Question 8 **(4 marks)**

If $\cos A = \frac{5}{13}$ and $\sin B = 0.8$, find the value of $\sin(A - B)$ where angle B is an obtuse angle.





$\sin(A-B) = \sin A \cos B - \cos A \sin B$

$= \frac{12}{13}\left(-\frac{3}{5}\right) - \frac{5}{13}\frac{4}{5}$

$= -\frac{36}{65} - \frac{20}{65}$

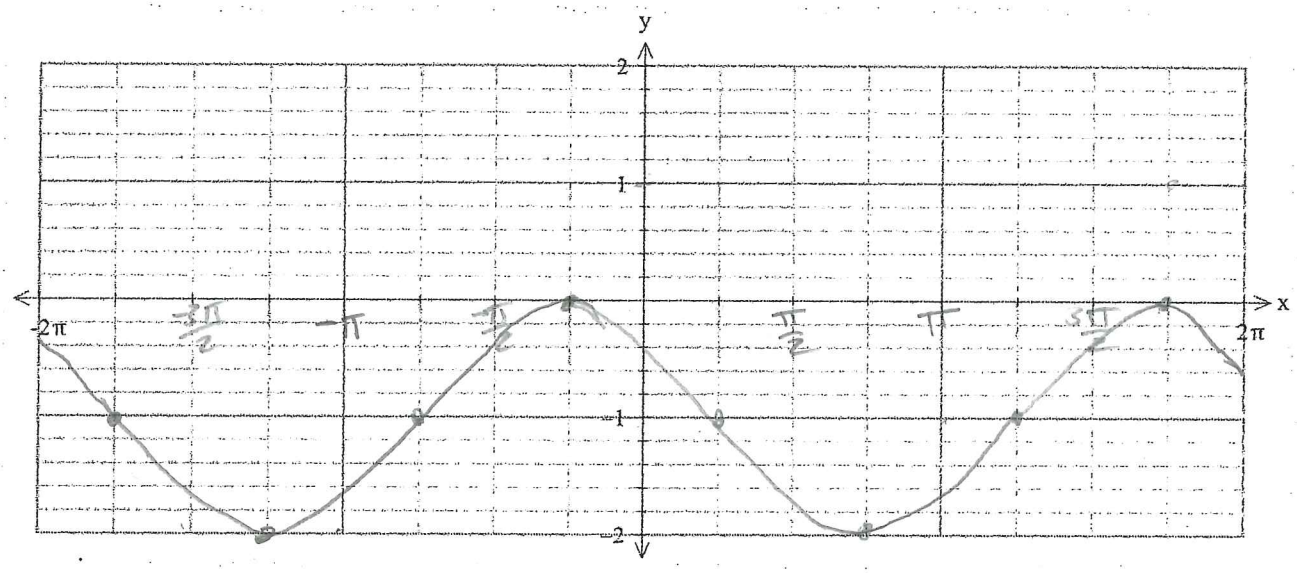
$= -\frac{56}{65}$

End of Calc Free

9. **(3 Marks)**

Sketch the following function on the axis below

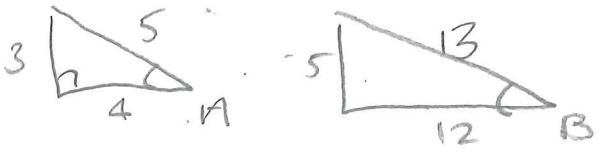
$y = \cos\left(x + \frac{\pi}{4}\right) - 1$



Extra Revision Questions from 2021 Test 3 – Calculator Free

Question 1 **(4)**

If angle A is an acute angle where $\cos A = \frac{4}{5}$ and angle B is obtuse, with $\tan B = -\frac{5}{12}$, evaluate sin (A - B).



$\sin(A - B)$

$= \sin A \cos B - \cos A \sin B$

$= \frac{3}{5}\left(\frac{-12}{13}\right) - \frac{4}{5}\left(\frac{5}{13}\right)$

$= \frac{-36}{65} - \frac{4}{13}$

$= \frac{-56}{65}$

Question 2 **(4)**

Solve $4\sqrt{3}\sin x + 6 = 0 \quad for -180^\circ \leq x \leq 270^\circ$

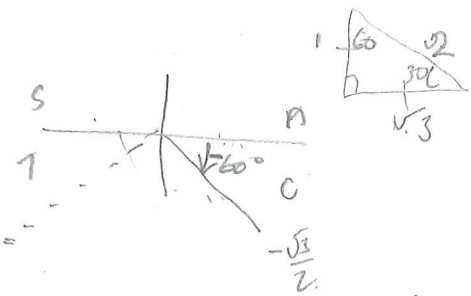
$4\sqrt{3}\sin x = -6$

$\sin x = -\frac{6}{4\sqrt{3}}$

$\sin x = -\frac{3}{2\sqrt{3}} \frac{2\sqrt{3}}{2\sqrt{3}}$

$= -\frac{6\sqrt{3}}{12}$

$\sin x = -\frac{\sqrt{3}}{2}$



$x = -120^\circ, -60, 240^\circ$