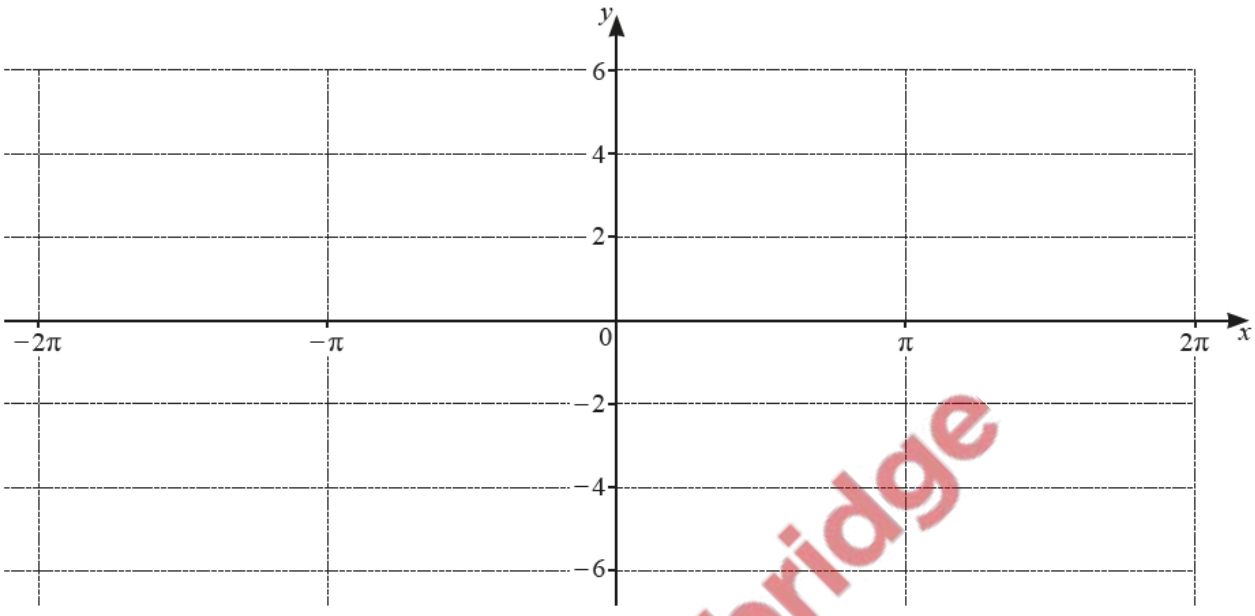
1. Nov/2022/Paper_0606_11/No.2

(a) On the axes, sketch the graph of $y = 5\sin\frac{x}{2} + 1$ for $-2\pi \leqslant x \leqslant 2\pi$. [3]



(b) Write down the amplitude of $5\sin\frac{x}{2} + 1$. [1]

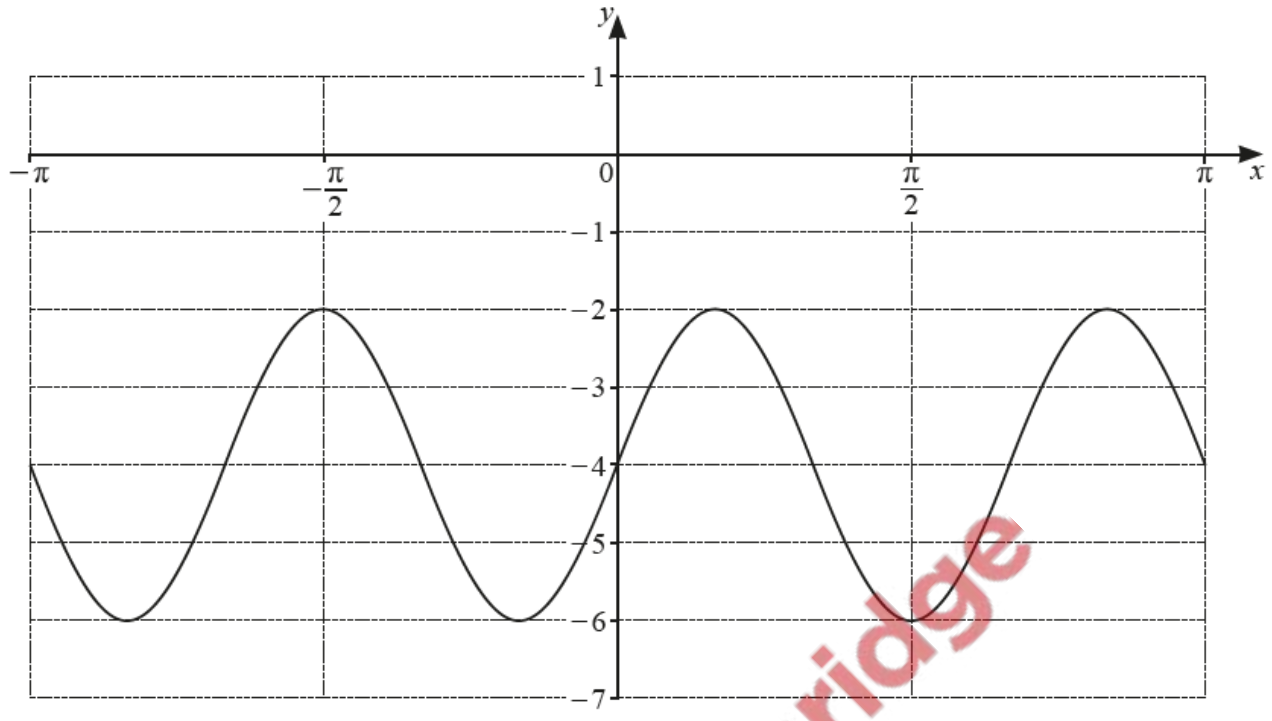
(c) Write down the period of $5\sin\frac{x}{2} + 1$. [1]

2. Nov/2022/Paper_0606_11/No.12

(a) Show that $\frac{1}{\operatorname{cosec}\theta - 1} + \frac{1}{\operatorname{cosec}\theta + 1} = 2\sin\theta\sec^2\theta$. [3]

(b) Hence solve the equation $\frac{1}{\operatorname{cosec} 2\phi - 1} + \frac{1}{\operatorname{cosec} 2\phi + 1} = 4\sin 2\phi$, for $-90° \leqslant \phi \leqslant 90°$. [6]

3. Nov/2022/Paper_0606_12/No.1



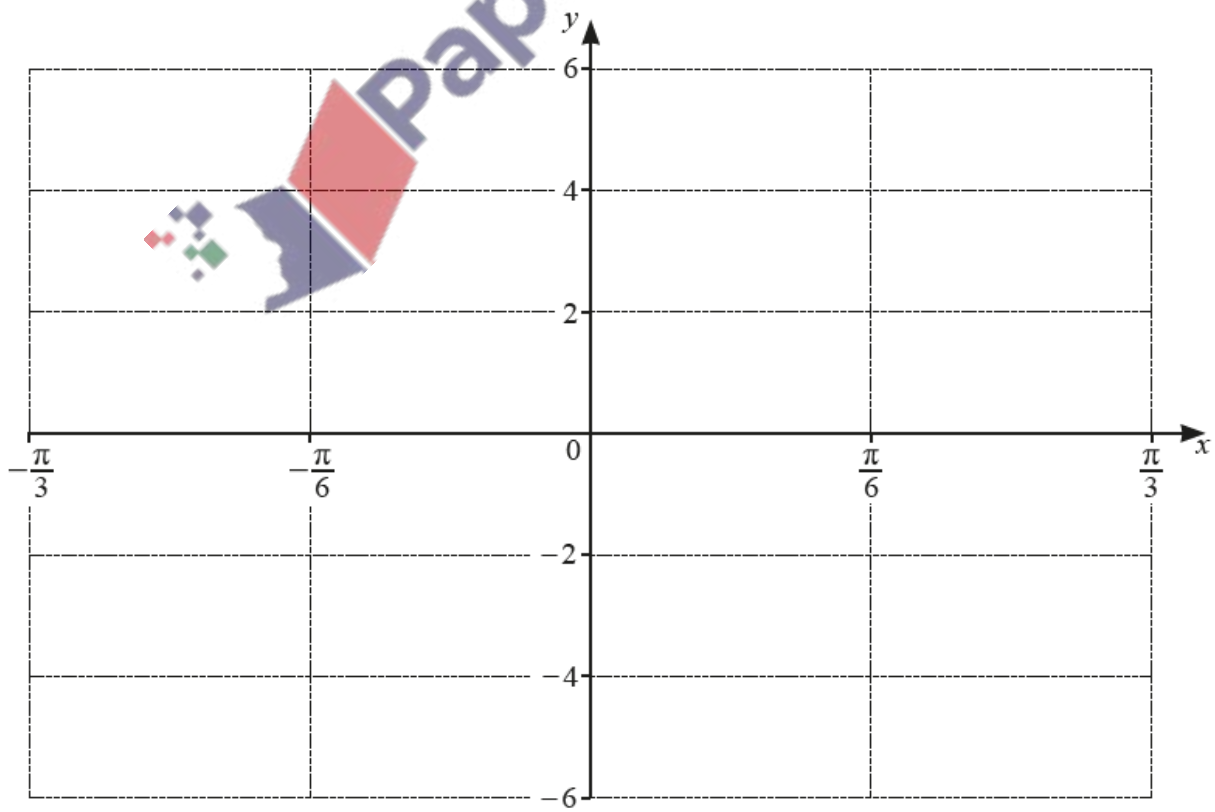
The diagram shows the graph of $y = a\sin bx + c$, where a, b and c are integers. Find the values of a, b and c. [3]

4. Nov/2022/Paper_0606_12/No.4

Solve the equation $3\sin\left(2x+\frac{\pi}{4}\right)=\sqrt{3}\cos\left(2x+\frac{\pi}{4}\right)$, for $0 \leqslant x \leqslant \pi$. [5]

5. Nov/2022/Paper_0606_13/No.1

On the axes, sketch the graph of $y=4\sin 3x-2$ for $-\frac{\pi}{3} \leqslant x \leqslant \frac{\pi}{3}$. [3]



6. Nov/2022/Paper_0606_13/No.10

Solve the equation $\sqrt{2}\cos(3x+1.2) = 2\sin(3x+1.2)$, where x is in radians, for $-1.5 \leqslant x \leqslant 1.5$. [5]

7. Nov/2022/Paper_0606_22/No.7

(a) Show that $\frac{\sin x}{1-\cos x}+\frac{1-\cos x}{\sin x}=2\operatorname{cosec} x$. [4]

(b) Hence solve the equation $\frac{\sin x}{1-\cos x}+\frac{1-\cos x}{\sin x}=3\sin x-1$ for $0° < x < 360°$. [4]

8. Nov/2022/Paper_0606_23/No.5

(a) Show that $\dfrac{\cos x}{1-\sin x}+\dfrac{1-\sin x}{\cos x}=2\sec x$. [4]

(b) Hence solve the equation $\dfrac{\cos\frac{\theta}{2}}{1-\sin\frac{\theta}{2}}+\dfrac{1-\sin\frac{\theta}{2}}{\cos\frac{\theta}{2}}=8\cos^2\dfrac{\theta}{2}$ for $-360° < \theta < 360°$. [4]