## Trig - Compound and Double Angle

1. Solve algebraically the following equations for $0 \leq x \leq 360^{\circ}$.
a) $\sin 3 x-1=0$
b) $2 \sin ^{2} x=1$
(6)
2. Solve algebraically the following equations for $0 \leq x \leq 2 \pi$.
a) $\cos 2 x=\frac{\sqrt{3}}{2}$
b) $2+3 \sin \left(2 x-\frac{\pi}{6}\right)=5$
3. a) Express $\sin x \cos 60^{\circ}-\cos x \sin 60^{\circ}$ in the form $\sin (A-B)^{0}$.
b) Hence solve the equation $\sin x \cos 60^{\circ}-\cos x \sin 60^{\circ}=\frac{1}{2}$ for $0 \leq x \leq 180^{\circ}$.
4. Solve the following equations where $0 \leq x \leq 2$ л.
a) $\sin 2 x-\sin x=0$
b) $\cos 2 x-\sin x=0$
c) $\cos 2 x=2 \sin ^{2} x$
d) $\cos 2 x-4 \cos x-5=0$
5. Given that $\sin A=\frac{3}{4}$, where $0 \leq A \leq \frac{\pi}{2}$, find the exact value of $\sin 2 A$
6. The diagram shows two curves $y=\cos 2 x$ and $y=1+\sin x$, where $0 \leq x \leq 360^{\circ}$.

Find the $x$-coordinate of the point of intersection at $A$.


## Revision

7. Find $x$ if $4 \log _{x} 6-2 \log _{x} 4=1$. (non-calc)
