## Trig - Compound and Double Angle

- 1. Solve algebraically the following equations for  $0 \le x \le 360^{\circ}$ . a)  $\sin 3x - 1 = 0$  b)  $2\sin^2 x = 1$  (6)
- 2. Solve algebraically the following equations for  $0 \le x \le 2\pi$ . a)  $\cos 2x = \frac{\sqrt{3}}{2}$ b)  $2 + 3\sin(2x - \frac{\pi}{6}) = 5$ (6)
- 3. a) Express  $\sin x \cos 60^{\circ} \cos x \sin 60^{\circ}$  in the form  $\sin(A B)^{\circ}$ . (1) b) Hence solve the equation  $\sin x \cos 60^{\circ} - \cos x \sin 60^{\circ} = \frac{1}{2}$  for  $0 \le x \le 180^{\circ}$ . (3)
- 4. Solve the following equations where  $0 \le x \le 2\pi$ . a)  $\sin 2x - \sin x = 0$ b)  $\cos 2x - \sin x = 0$ c)  $\cos 2x = 2\sin^2 x$ d)  $\cos 2x - 4\cos x - 5 = 0$ (12)
- 5. Given that  $\sin A = \frac{3}{4}$ , where  $0 \le A \le \frac{\pi}{2}$ , find the exact value of  $\sin 2A$  (3)
- 6. The diagram shows two curves y = cos2x and y = 1 + sinx, where  $0 \le x \le 360^{\circ}$ .

Find the x- coordinate of the point of intersection at A. (5)



## Revision

7. Find x if  $4\log_x 6 - 2\log_x 4 = 1$ . (non-calc) (4)

40 Marks