	Solving trig equations with double angles	
1	Solve the equation $\cos 2x + 5\cos x - 2 = 0$ for $0 \le x \le 360^\circ$.	5
2	Solve the equation $\sin 2x - \cos x = 0$ for $0 \le x \le 180^\circ$.	4
3	Solve the equation $3\cos 2x + \cos x = -1$ for $0 \le x \le 360^\circ$.	5
4	Solve the equation $5\sin x - 4 = 2\cos 2x$ for $0 \le x \le 2\pi$.	5
5	Solve the equation $\cos 2x + 2\sin x = \sin^2 x$ for $0 \le x \le 360^\circ$.	5
6	Solve the equation $\sin x - 2\cos 2x = 1$ for $0 \le x \le 2\pi$.	5

	Double Angle Equations – Answers	
1	Replace cos 2x with $2\cos^2 x - 1$	$2\cos^2 x - 1 + 5\cos x - 2 = 0$
	Simplify and equate to zero	$2\cos^2 x + 5\cos x - 3 = 0$
	Factorise	$(2\cos x - 1)(\cos x + 3) = 0$
	Solve for each factor	$(2\cos x - 1) = 0$, $\cos x = ½$, $x = 60°$ and $300°$
		$(\cos x + 3) = 0$, $\cos x = -3$, no solutions
2	Replace sin 2x with 2sinxcosx	$2\sin x\cos x - \cos x = 0$
	Factorise	$\cos x(2\sin x - 1) = 0$
	Solve for each factor	$\cos x = 0$, $x = 0°$ and ~~$360°$~~
		$(2\sin x - 1) = 0 = 0$, $\sin x = 1/2$, $x = 30°$ and $150°$
3	Replace cos 2x with $2\cos^2 x - 1$	$3(2\cos^2 x - 1) + \cos x = -1$
	Simplify and equate to zero	$6\cos^2 x + \cos x - 2 = 0$
	Factorise	$(2\cos x - 1)(3\cos x + 2) = 0$
	Solve for each factor	$(2\cos x - 1) = 0$, $\cos x = ½$, $x = 60°$ and $300°$
		$(3\cos x + 2) = 0$, $\cos x = -2/3$, $x = 138°$ and $228°$
4	Replace cos 2x with $1 - 2\sin^2 x$	$5\sin x - 4 = 2(1 - 2\sin^2 x)$
	Simplify and equate to zero	$5\sin x - 4 = 2 - 4\sin^2 x$
		$4\sin^2 x + 5\sin x - 6 = 0$
	Factorise	$(4\sin x - 3)(\sin x + 2) = 0$
	Solve for each factor	$(4\sin x - 3) = 0$, $\sin x = 3/4$, $x = 0.848, 2.29$
		$(\sin x + 2) = 0$, $\sin x = -2$, no solutions
	Make sure that your final answers are in radians	
5	Replace cos 2x with $1 - 2\sin^2 x$	$1 - 2\sin^2 x + 2\sin x = \sin^2 x$
	Simplify and equate to zero	$3\sin^2 x - 2\sin x - 1 = 0$
	Factorise	$(3\sin x + 1)(\sin x - 1) = 0$
	Solve for each factor	$(3\sin x + 1) = 0$, $\sin x = -1/3$ $x = 199.5°$ and $340.5°$
		$(\sin x - 1) = 0$, $\sin x = 1$, $x = 90°$
6	Replace cos 2x with $1 - 2\sin^2 x$	$\sin x - 2(1 - 2\sin^2 x) = 1$
	Simplify and equate to zero	$4\sin^2 x + \sin x - 3 = 0$
	Factorise	$(4\sin x - 3)(\sin x + 1) = 0$
	Solve for each factor	$(4\sin x - 3) = 0$, $\sin x = 3/4$, $x = 0.848, 2.29$
		$(\sin x + 1) = 0$, $\sin x = -1$, $x = \frac{3\pi}{2}$
	Make sure that your final answers are in radians	