If You See	You Should Think
A square term	Pythagorean identity OR cos2θ (double angle) formula
Examples: 1) $(1 + \tan^2\theta) (1 - \cos^2\theta)$	In example 1), $1 + \tan^2 \theta = \sec^2 \theta$ and $1 - \cos^2 \theta = \sin^2 \theta$, giving $(\sec^2 \theta) (\sin^2 \theta) = \tan^2 \theta$.
1) $(1 + \tan \theta)(1 - \cos \theta)$ 2) $(2\cos^2\theta - 1)\tan^2\theta$	In example 2), $2\cos^2\theta - 1 = \cos 2\theta$, giving $\cos 2\theta \tan 2\theta = \sin 2\theta$
Fractional terms	Perform fraction operations: addition, subtraction,
	multiplication, division, cancelation, etc.
Example:	
	In the example, find a common denominator and add:
$\frac{\sin\theta}{\cos\theta} + \frac{\cos\theta}{\cos\theta}$	$\sin^2\theta$ $\cos^2\theta$ $\sin^2\theta + \cos^2\theta$ 1 $-\cos^2\theta$
$\cos\theta$ $\sin\theta$	$\frac{1}{\sin\theta\cos\theta} + \frac{1}{\sin\theta\cos\theta} - \frac{1}{3} - \frac$
A common factor	Factoring a common factor often simplifies the remaining
	expression. The remaining expression may then be further
Example:	simplified by the other techniques.
$\cos^2\theta \tan^2\theta + \cos^2\theta$	In the example, factor $\cos^2\theta$, giving $\cos^2\theta(\tan^2\theta + 1) = \cos^2\theta(\sec^2\theta) = 1$
A polynomial factor	Factor as with other polynomials.
Example:	In the example, factor in the same manner as one would factor
	$2x^2 - 3x + 1 = (2x - 1) (x - 1).$
$2\sin^2\theta - 3\sin\theta + 1$	
	In this case, the factors are $(2\sin\theta - 1)(\sin\theta - 1)$.
A mixture of different trigonometric	Rewrite all functions in terms of $\sin\theta$ and $\cos\theta$.
functions	In the example, $\tan\theta\cos\theta = \frac{\sin\theta}{\cos\theta} \cos\theta = \sin\theta$
Example	$\cos\theta$
tanfic.	
Sum or difference	Use the sum/difference formulas.
Example:	In the example, $sin(x + y) = sinx cosy + siny cosx$ and
	sin (x - y) = sinx cosy - siny cosx. Adding and multiplying by 2
$2\sin(x + y) + 2\sin(x - y)$	gives 2 sinx cosy.
Double angle	Use the double angle formulas to get all functions in terms of
	the same variable (θ) .
Example:	
	In the example, $\sin 2\theta = 2\sin\theta \cos\theta$, which gives
sin20 sec0	$(2\sin\theta\cos\theta)\sec\theta = 2\sin\theta.$
Special denominator	Multiply top and bottom by the conjugate of the denominator.
Example:	In the example
1	$1 \qquad 1 \qquad (1+\cos\theta) \qquad 1+\cos\theta \qquad 1+\cos\theta$
$\frac{1-\cos\theta}{1-\cos\theta}$	$\left \frac{1-\cos\theta}{1-\cos\theta} = \frac{1-\cos\theta}{1-\cos\theta} \left \frac{1+\cos\theta}{1+\cos\theta}\right = \frac{1+\cos\theta}{1-\cos^2\theta} = \frac{1+\cos\theta}{\sin^2\theta}$
A mixture of different trigonometric functions Example: $\tan\theta\cos\theta$ Sum or difference Example: $2\sin(x + y) + 2\sin(x - y)$ Double angle Example: $\sin2\theta \sec\theta$ Special denominator Example: $\frac{1}{1 - \cos\theta}$	Rewrite all functions in terms of sinθ and cosθ. In the example, $\tan\theta\cos\theta = \frac{\sin\theta}{\cos\theta}\cos\theta = \sin\theta$ Use the sum/difference formulas. In the example, $\sin(x + y) = \sin x \cos y + \sin y \cos x$ and $\sin (x - y) = \sin x \cos y - \sin y \cos x$. Adding and multiplying by 2 gives 2 sinx cosy. Use the double angle formulas to get all functions in terms of the same variable (θ). In the example, $\sin 2\theta = 2\sin\theta \cos \theta$, which gives $(2\sin\theta \cos\theta) \sec\theta = 2\sin\theta$. Multiply top and bottom by the conjugate of the denominator. In the example, $\frac{1}{1-\cos\theta} = \frac{1}{1-\cos\theta} \left(\frac{1+\cos\theta}{1+\cos\theta}\right) = \frac{1+\cos\theta}{1-\cos^2\theta} = \frac{1+\cos\theta}{\sin^2\theta}$

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