Advanced Algebra

Unit 10 Assignment #23 Double Angle Formulas

Sin2x = 2sinxcosx

Tan2x = $\frac{2tanx}{1-tan^2}$

cos2x = cos^2x-sin^2x

cos2x=$2cos^2x-1$

Cos2x=$1-2sin^2x$

I can use parametric equations (Chapter8) to find horizontal distance.

A projectile is shot from the ground at 24 feet per second. The angle of launch is 18 degrees.

Draw the right triangle and use the sin and cosine functions to write the parametric equations.

Use your table to find how long it was in the air_____

What was the horizontal distance traveled_____

Another use of double angle would be to find the horizontal distance of a projectile that has an initial height of 0.

The formula is Distance= $\frac{v^2(\sin(2\vartheta)}{32}$

I can use a double angle formula to find the horizontal distance traveled of a projectile shot from ground.

1) A projectile is shot from the ground at an angle of 12° with an initial velocity of 87 feet per second.

Horizontal Distance	Total time it was in air?

2) A projectile is shot from the ground at an angle of 20 with an initial velocity of 56 feet per second.

Horizontal Distance	Total time it was in the air?

Sin2x = 2sinxcosx

cos2x = $\cos^2 x - \sin^2 x$

Tan2x = $\frac{2tanx}{1-tan^2}$

cos2x=$2\cos^2 x - 1$

Cos2x=$1-2\sin^2 x$

I can use double angle formulas to solve Trig Equations.

1) Cos(2x) = -1

2) cos(2x) –cosx = 0

3) sin(2x)sin(x) = cos(x)

4) cos(2x)= $-2\cos^2(x)$

5) cot(x) = tan(x)

6) sin(2x) + sin(x) = 0

7)2tan(x)= tan(2x)

8) sin (2x)=tan(x)

9) cos(2x) -3sin(x) = 2

10) $\frac{3}{2}$tan(2x) =2