

Tips:

1. If the equation involves functions of BOTH  $2x$  and  $x$ , use the double angle identities to change all functions of  $2x$  into functions of just  $x$ .
2. If the equation involves JUST functions of  $2x$ , solve for  $2x$ , and then solve for  $x$ . Don't forget to list ALL solutions by adding the period.
3. Don't ever divide both sides by a function of the variable so it disappears (don't divide away an  $x$ )... this should sound familiar. JUST SAY NO!
4. Visualize the graph when possible if this helps you.

1. Solve  $\cos 2x - \sin x = 0$  for  $0 \leq x < 2\pi$  by using identities.

2. Solve  $\cos 2x = \cos x$  for  $0 \leq x < 2\pi$ .

3. Solve  $\sin 3x = \cos 3x$  for  $0^\circ \leq x < 360^\circ$ . (Hint: Remember the option to arrange sine and cosine as tangent...)

4. Solve  $\tan\left(x - \frac{\pi}{18}\right) = 1$  for  $0 \leq x < 2\pi$ .