Warm-up
Solve the following Trig Equations

1. $\sin^2 x - \frac{1}{4} = 0$

2. $\tan^4 x - \tan^2 x = 0$

3. $4\cos^2 x + 2\cos x - 2 = 0$

4. $2\cos^3 x + \cos^2 x - \cos x = 0$
Warm-up
Solve the following Trig Equations

1. \[ \sin^2 x - \frac{1}{4} = 0 \]
   \[ x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6} \]

2. \[ \tan^4 x - \tan^2 x = 0 \]
   \[ x = 0, \frac{\pi}{4}, \frac{3\pi}{4}, \pi, \frac{5\pi}{4}, \frac{7\pi}{4} \]

3. \[ 4\cos^2 x + 2\cos x - 2 = 0 \]
   \[ x = \frac{\pi}{3}, \pi, \frac{5\pi}{3} \]

4. \[ 2\cos^3 x + \cos^2 x - \cos x = 0 \]
   \[ x = \frac{\pi}{3}, \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{3} \]
Homework

2) Both x values work
6) Both x values work
7) $2\pi/3, 4\pi/3$
9) $\pi/6, 11\pi/6$
17) $\pi/3, 2\pi/3, 4\pi/3, 5\pi/3$
23) $n\pi, \pi/6 + n\pi, 5\pi/6 + n\pi$
24) $\pi/2 + n\pi, 2\pi/3 + 2n\pi, 4\pi/3 + 2n\pi$
More Trig Solving...
Solve for \([0, 2\pi]\); and all answers

\[
\sin (2x) = \frac{1}{2}
\]

\[
\frac{2x}{2} = \frac{\pi}{6} + \frac{2\pi n}{2}
\]

\[
\frac{2x}{2} = \frac{5\pi}{6} + \frac{2\pi n}{2}
\]

\[
x = \frac{\pi}{12} + \pi n
\]

\[
x = \frac{5\pi}{12} + \pi n
\]
More Trig Solving...
Solve for \([0, 2\pi]\); and all answers

\(\cot^2(2x) = 1\)

\[\cot(2x) = \pm 1\]

\[\cot(2x) = \pm 1\]

\[\frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \frac{7\pi}{2}, \ldots\]

\[\frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \frac{7\pi}{2}, \ldots\]
More Trig Solving...
Solve for \([0, 2\pi]\); and all answers

\[
\tan(4x) = 0
\]

\[
\begin{align*}
x &= 0, \frac{\pi}{2}, \frac{3\pi}{2} \\
u &= 0, \pi \\
u_x &= \frac{\pi}{4} + \frac{\pi}{2}n \\
u_x &= \frac{3\pi}{4} + \frac{\pi}{2}n
\end{align*}
\]