Trigonometric equations and inequalities
(Extra homework)

1.) $6\,cosx = \frac{1}{sinx}$

2.) $3\,sin2x = 2\,cosx$

3.) $sinx = \frac{cos2x}{2}$

4.) $3\,sin^2x - 4\,cos^2x = \frac{sin2x}{2}$

5.) $\sin 2x \cdot (sinx - 1) = cosx \cdot (sinx + 2)$

6.) $8\,sin^2x + 4\,sin2x + 5\,cos2x = 8$

7.) $\frac{1}{sinx} + \frac{1}{cosx} = 2\sqrt{2}$

8.) $cos2x + sin2x = -1$

9.) $tg^2x - 5 = \frac{1}{cosx}$

10.) $tg^2x + 17 = \frac{10}{cosx}$

11.) $0 < -3\,sinx + 4$

12.) $\frac{1}{5} \geq -\frac{1}{2}cosx$

13.) $3 \cdot tgx \geq 8$

14.) $|cosx| < \frac{1}{2}$

15.) $sinx > cosx$ (where does the graph of sine go above the graph of cosine?)

16.) $\cos\left(\frac{\pi}{6} + x\right) < \frac{1}{2}$

17.) $ctgx \leq 2$

18.) $sinx \geq \frac{\sqrt{3}}{2}$