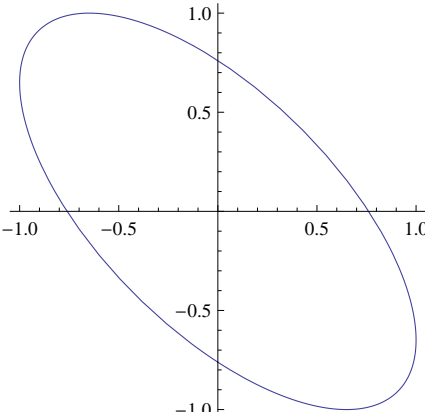


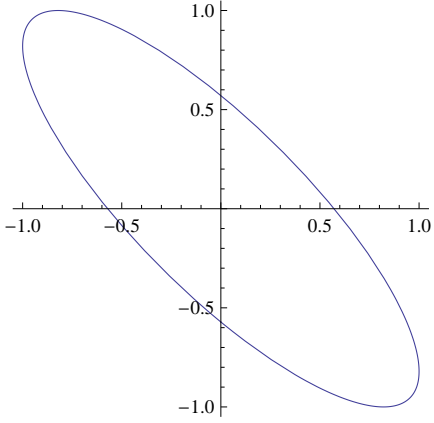
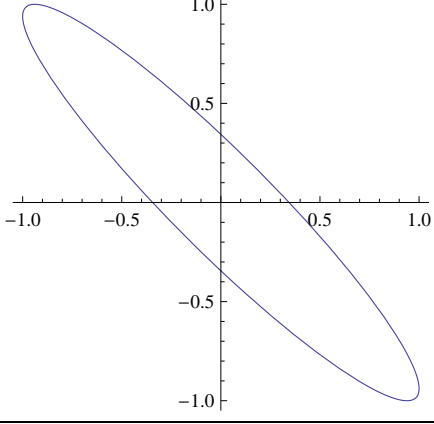
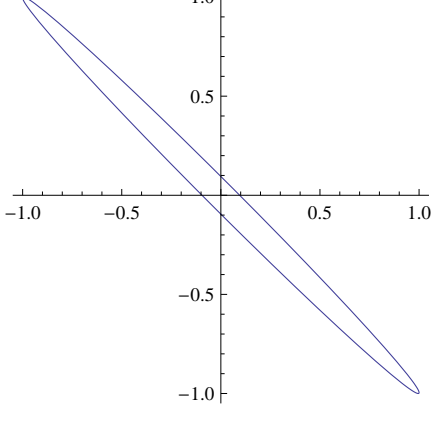
```

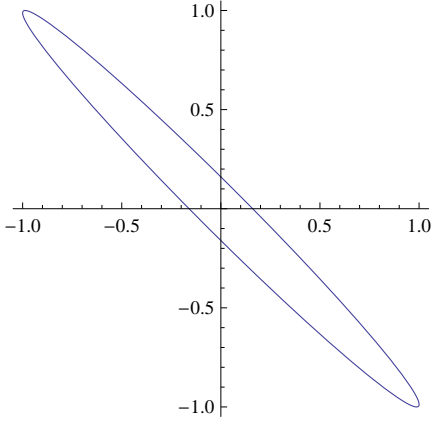
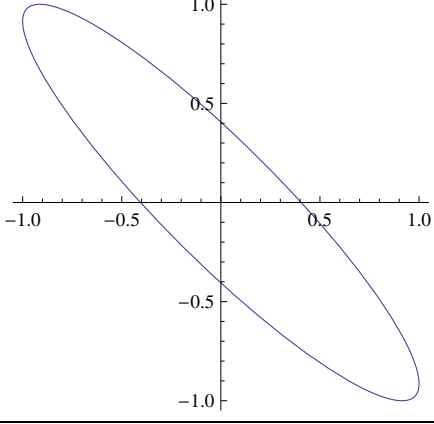
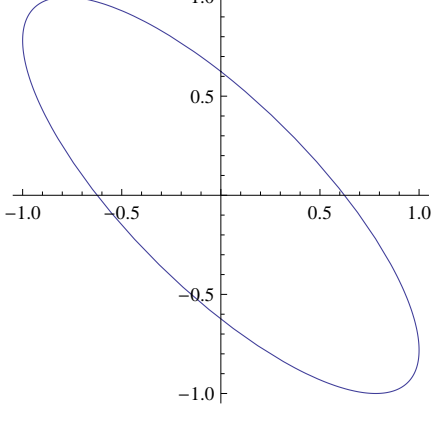
In[60]:= Fc =  $\sqrt{20 * 30}$ ;
Print[]
Print["Center frequency = " <>
ToString[Round[Fc, 0.01]] <> " MHz (geometric mean from 20 to 30 MHz)"]
u = Table[{
" " <> ToString[PaddedForm[x, {3, 1}, NumberPadding -> {"", "0"}]] <> " MHz ",
ToString[PaddedForm[Round[ $\frac{Fc - x}{Fc} 360, 0.1$ ], {4, 1}, NumberPadding -> {"", "0"}]] <> "° ",
ParametricPlot[{Sin[t], Sin[t +  $\frac{\pi}{2} + \frac{Fc - x}{Fc} 2 \pi$ ]}, {t, 0, 2  $\pi$ },
PlotRange -> 1.05, Axes -> True, ImageSize -> {200, 200}, PerformanceGoal -> "Quality"],
ToString[PaddedForm[Round[ $\frac{\sqrt{\sin[\frac{\pi}{4}]^2 + \cos[\frac{\pi}{4} + \frac{Fc - x}{Fc} 2 \pi]^2}}{\sqrt{\sin[\frac{3\pi}{4}]^2 + \cos[\frac{3\pi}{4} + \frac{Fc - x}{Fc} 2 \pi]^2}}$ , 0.001],
{4, 3}, NumberPadding -> {"", "0"}]]],
{x, 15, 30, 1}];
v = Prepend[u, {"Frequency", "Degrees Offset Phasing" <> FromCharacterCode[13] <> "from 24.49 MHz",
"Lissajous Figure", "Axial Ratio - INCORRECT!"];
Grid[
v,
Frame ->
All]

```

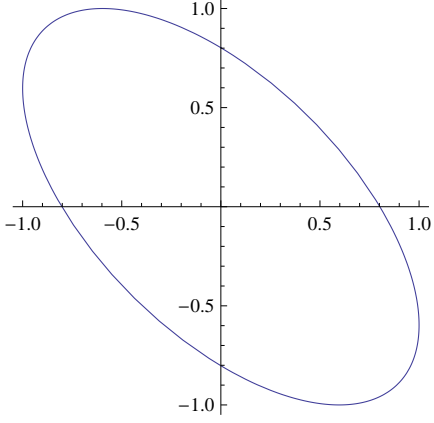
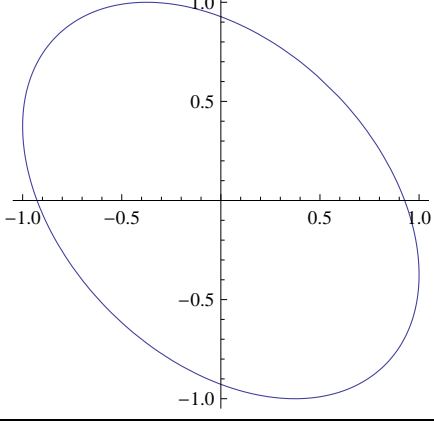
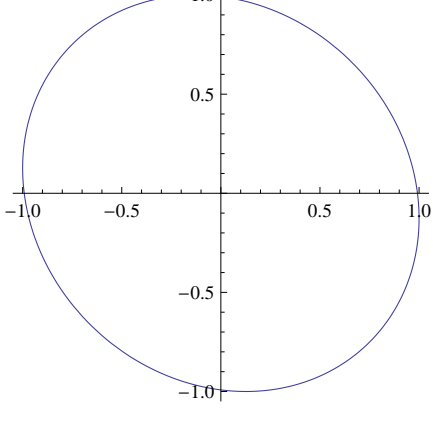
Center frequency = 24.49 MHz (geometric mean from 20 to 30 MHz)

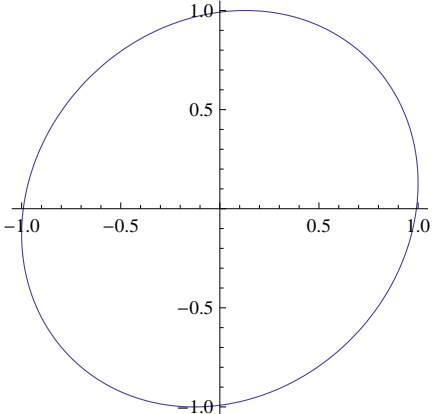
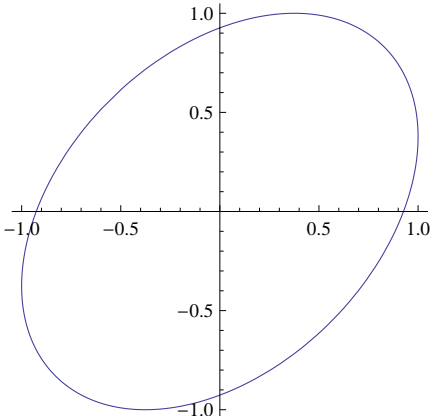
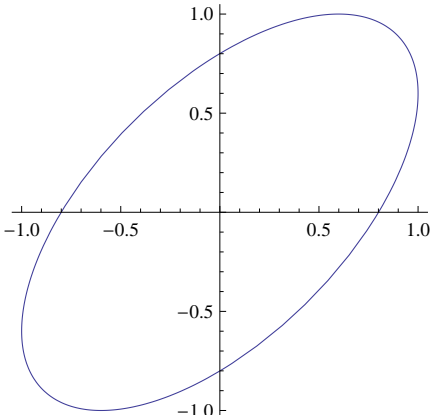
Frequency	Degrees Offset Phasing from 24.49 MHz	Lissajous Figure	Axial Ratio - INCORRECT!
15.0 MHz	139.5°		1.718

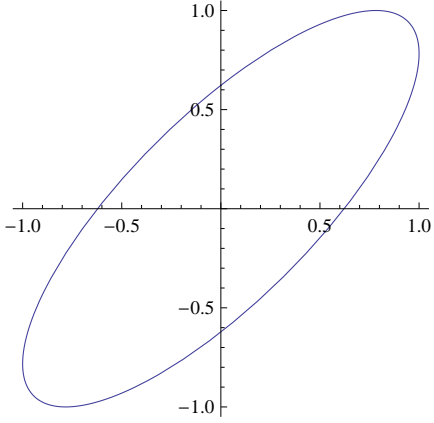
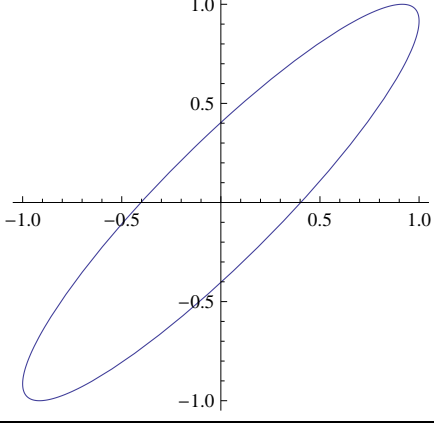
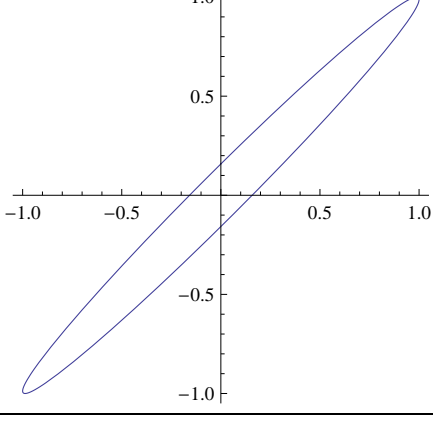
16.0 MHz	124.8°		1.663
17.0 MHz	110.2°		1.399
18.0 MHz	95.5°		1.100

19.0 MHz	$80.8^\circ$		0.852
20.0 MHz	$66.1^\circ$		0.677
21.0 MHz	$51.4^\circ$		0.587

Out[65]=

22.0 MHz	36.7°		0.594
23.0 MHz	22.0°		0.696
24.0 MHz	7.3°		0.881

25.0 MHz	$-7.4^\circ$		1.137
26.0 MHz	$-22.1^\circ$		1.439
27.0 MHz	$-36.8^\circ$		1.686

28.0 MHz	$-51.5^\circ$		1.703
29.0 MHz	$-66.2^\circ$		1.473
30.0 MHz	$-80.9^\circ$		1.170

$$\text{In}[29]= \sqrt{\sin\left[\frac{\pi}{4}\right]^2 + \sin\left[\frac{\pi}{4} + \frac{\pi}{2} + \frac{\sqrt{20 * 30} - 18}{\sqrt{20 * 30}} 2\pi\right]^2} // N$$

Out[29]= 1.04625