Pre-Calculus Worksheet Name: _____

Conic Sections – Ellipses Period: ____

I. Find the requested information for each ellipse. Graph *COMPLETELY*.

1. $\frac{x^2}{36}+\frac{y^2}{16}=1$

Center: (_____, _____)

Major Axis Endpoints: (_____, _____) and (_____, _____)

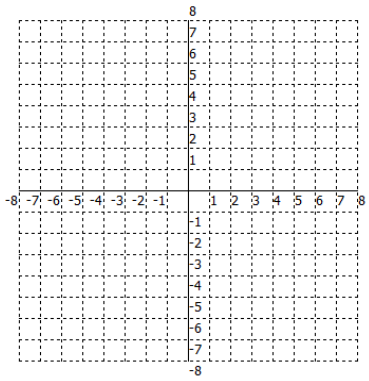
Minor Axis Endpoints: (_____, _____) and (_____, _____)

Foci: (_____, _____) and (_____, _____)

Eccentricity ≈ _____

Parametric Form of the Ellipse:

$x=$ _____ and $y=$ _____



2. $x=7\cos T$
$y=8\sin T$

Center: (_____, _____)

Major Axis Endpoints: (_____, _____) and (_____, _____)

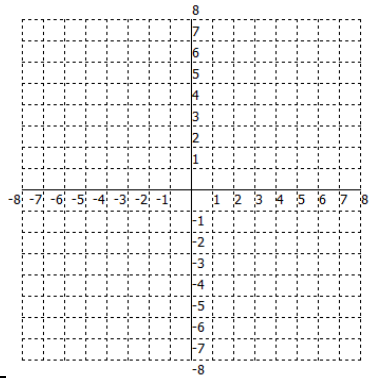
Minor Axis Endpoints: (_____, _____) and (_____, _____)

Foci: (_____, _____) and (_____, _____)

Eccentricity ≈ _____

Standard Form of the Ellipse:

_____



3. $16x^2+9y^2=144$

Center: (_____, _____)

Major Axis Endpoints: (_____, _____) and (_____, _____)

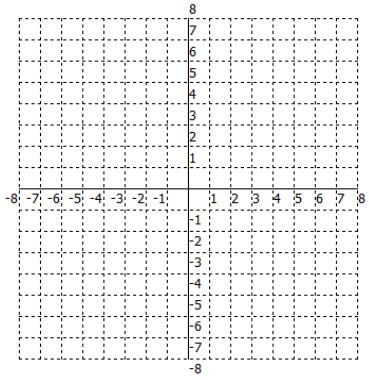
Minor Axis Endpoints: (_____, _____) and (_____, _____)

Foci: (_____, _____) and (_____, _____)

Eccentricity ≈ _____

Parametric Form of the Ellipse:

$x=$ _____ and $y=$ _____



4. $\frac{(x-2)^2}{16}+\frac{(y-3)^2}{9}=1$

Center: $(\_\_\_\_\_,\_\_\_\_\_)$

Major Axis Endpoints: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

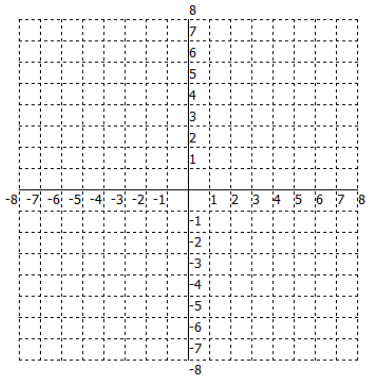
Minor Axis Endpoints: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

Foci: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

Eccentricity $\approx$ _____

Parametric Form of the Ellipse:

$x=$ _____ and $y=$ _____



5. $x=2\cos T-3$
$y=4\sin T+5$

Center: $(\_\_\_\_\_,\_\_\_\_\_)$

Major Axis Endpoints: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

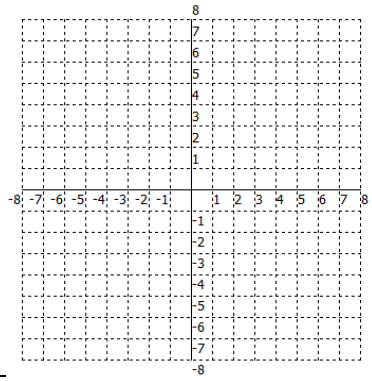
Minor Axis Endpoints: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

Foci: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

Eccentricity $\approx$ _____

Standard Form of the Ellipse:

_____



6. $x^2+9y^2+4x+18y+4=0$

Standard Form of the Ellipse:

_____

Center: $(\_\_\_\_\_,\_\_\_\_\_)$

Major Axis Endpoints: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

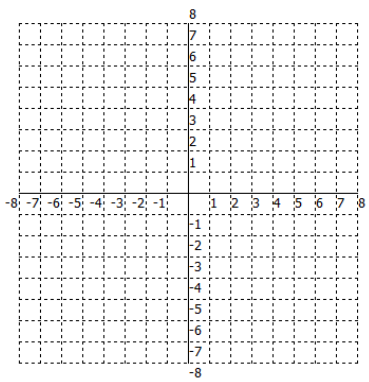
Minor Axis Endpoints: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

Foci: $(\_\_\_\_\_,\_\_\_\_\_)$ and $(\_\_\_\_\_,\_\_\_\_\_)$

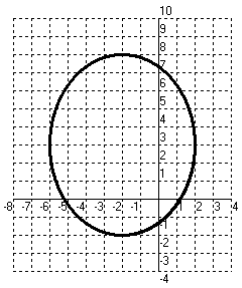
Eccentricity $\approx$ _____

Parametric Form of the Ellipse:

$x=$ _____ and $y=$ _____



II. Write the equation of each ellipse in the requested form.

7. Foci $(\pm 4, 0)$; length of the major axis is 12; parametric form	8. Foci $(1, 7)$ and $(1, -3)$; length of the minor axis is 8; standard form
9. Foci $(2, 5)$ and $(2, 1)$; Sum of the focal radii is $2\sqrt{13}$; standard form	10. Major Axis Endpoints $(-16, 4)$ and $(4, 4)$; Minor Axis Endpoints $(-6, -4)$ and $(-6, 12)$; parametric form
11. Sum of the focal radii is 18; Minor Axis Endpoints $\left(0, \pm 6\sqrt{2}\right)$; standard form	12. One Major Axis Endpoint $(-7, -9)$; center $(-7, 6)$; one foci $(-7, 15)$; parametric form
13. in standard form 	14. in parametric form