Today's Plan:

Learning Target (standard): I will analyze circles, ellipses and hyperbolas as conic sections.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

Transitions to College Math Name_____

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Conic Sections Review

Use the information provided to write the standard form equation of each circle.

1) Center: $(-2, -11)$
Radius: 4

$(x+2)^2+(y+11)^2=16$

2) Center: $(9, 1)$
Radius: 5

$(x-9)^2+(y-1)^2=25$

Use the information provided to write the general conic form equation of each circle.

3) Center: $(8, 11)$
Radius: 2

$x^2+y^2-16x-22y+181=0$

4) Center: $(-3, -7)$
Radius: 8

$x^2+y^2+6x+14y-6=0$

Use the information provided to write the standard form equation of each ellipse.

5) Vertices: $(0, 9), (0, -9)$
Co-vertices: $(7, 0), (-7, 0)$

$\frac{x^2}{49}+\frac{y^2}{81}=1$

6) Vertices: $(8, 0), (-8, 0)$
Co-vertices: $(0, 3), (0, -3)$

$\frac{x^2}{64}+\frac{y^2}{9}=1$

Use the information provided to write the general conic form equation of each ellipse.

7) Vertices: $(5, 0), (-5, 0)$
Co-vertices: $(0, 3), (0, -3)$

$9x^2+25y^2-225=0$

8) Vertices: $(5, 0), (-5, 0)$
Co-vertices: $(0, 2), (0, -2)$

$4x^2+25y^2-100=0$

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Use the information provided to write the standard form equation of each hyperbola.

9) Vertices: $(0, 11), (0, -11)$
Foci: $(0, \sqrt{146}), (0, -\sqrt{146})$

$\frac{y^2}{121} - \frac{x^2}{25} = 1$

10) Vertices: $(12, 0), (-12, 0)$
Foci: $(4\sqrt{10}, 0), (-4\sqrt{10}, 0)$

$\frac{x^2}{144} - \frac{y^2}{16} = 1$

Use the information provided to write the general conic form equation of each hyperbola.

11) Vertices: $(3, 0), (-3, 0)$
Foci: $(3\sqrt{10}, 0), (-3\sqrt{10}, 0)$

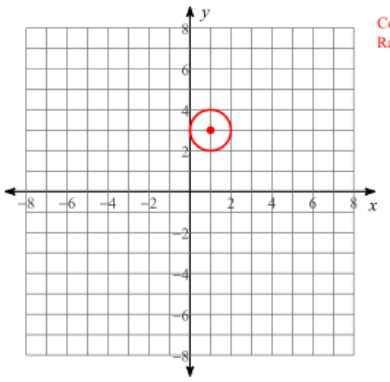
$9x^2 - y^2 - 81 = 0$

12) Vertices: $(0, \sqrt{5}), (0, -\sqrt{5})$
Foci: $(0, \sqrt{205}), (0, -\sqrt{205})$

$-x^2 + 40y^2 - 200 = 0$

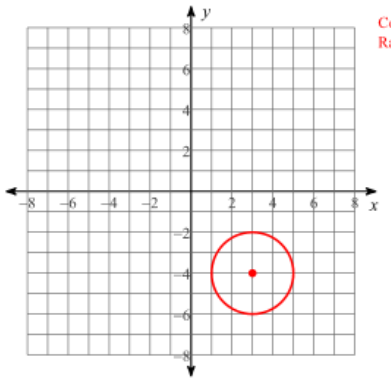
Identify the center and radius of each. Then sketch the graph.

13) $(x-1)^2 + (y-3)^2 = 1$



Center: $(1, 3)$
Radius: 1

14) $x^2 + y^2 - 6x + 8y + 21 = 0$



Center: $(3, -4)$
Radius: 2

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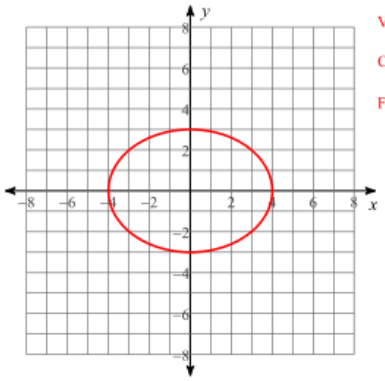
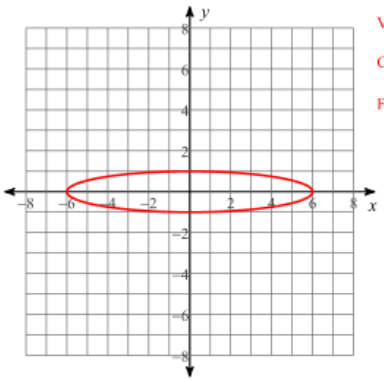
Identify the vertices, co-vertices, and foci of each. Then sketch the graph.

15) $\frac{x^2}{16} + \frac{y^2}{9} = 1$



Vertices: $(4, 0)$ $(-4, 0)$
Co-vertices: $(0, 3)$ $(0, -3)$
Foci: $(\sqrt{7}, 0)$ $(-\sqrt{7}, 0)$

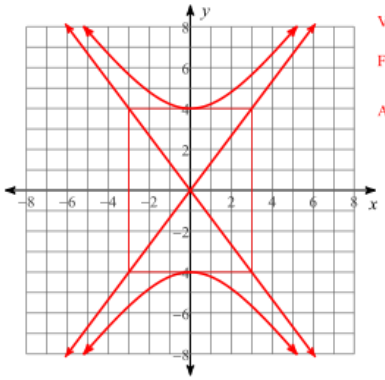
16) $x^2 + 36y^2 - 36 = 0$



Vertices: $(6, 0)$ $(-6, 0)$
Co-vertices: $(0, 1)$ $(0, -1)$
Foci: $(\sqrt{35}, 0)$ $(-\sqrt{35}, 0)$

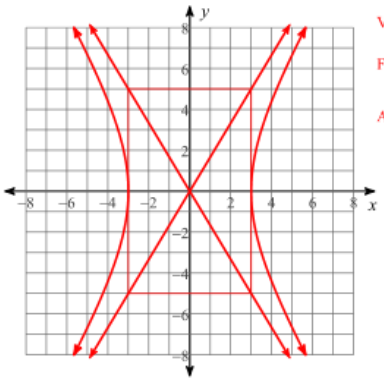
Identify the vertices, foci, and asymptotes of each. Then sketch the graph.

17) $\frac{y^2}{16} - \frac{x^2}{9} = 1$



Vertices: $(0, 4)$ $(0, -4)$
Foci: $(0, 5)$ $(0, -5)$
Asym.: $y = \frac{4}{3}x$ $y = -\frac{4}{3}x$

18) $25x^2 - 9y^2 - 225 = 0$



Vertices: $(3, 0)$ $(-3, 0)$
Foci: $(\sqrt{34}, 0)$ $(-\sqrt{34}, 0)$
Asym.: $y = \frac{5}{3}x$ $y = -\frac{5}{3}x$

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