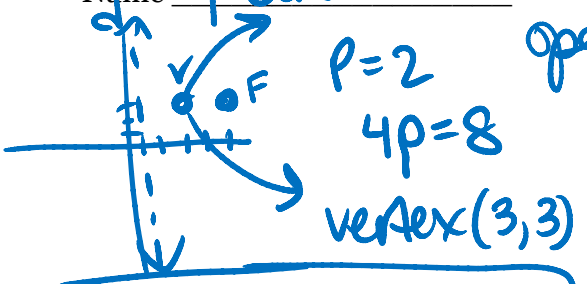
Pre-Calc
Conics WS

name DiMarco

Write the equation for each conic.

1) Focus (5, 3)
Directrix: x = 1
Name Parabola

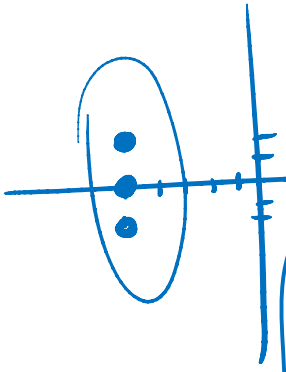


opens Right
$+y^2$

$(y-3)^2 = 8(x-3)$

2) Center (-5, 0)
h k
Foci (-5, 2) and (-5, -2)
b = 3
Name: Ellipse

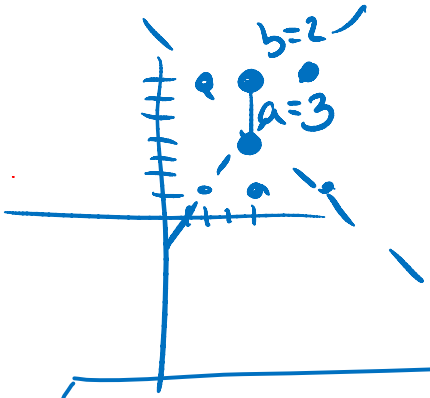
c=2
vertical
$c^2 = a^2 - b^2$
$4 = a^2 - 9$
$13 = a^2$
$a = \sqrt{13}$



$\frac{(x+5)^2}{9} + \frac{y^2}{13} = 1$

3) Center (4, 4)
Vertex (4, 7)
b=2
Name: Hyperbola

vertical



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

$c^2 = a^2 + b^2$
$c = 5$
$(-2 \pm 5, -3)$

4) Write in standard form, then name and identify the center, vertices, and foci.

$9x^2 + 36x - 16y^2 - 96y = 252$

Hyperbola

$9(x^2+4x+4) - 16(y^2+6y+9) =$
252
$+36$
-144

$\frac{9(x+2)^2}{144} - \frac{16(y+3)^2}{144} = \frac{144}{144}$

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

center (-2;3) horizontal
a = 4 b = 3
vertices (-6;3)(2;3)
foci (-7,-3) (3;3)