

Mth 112

THURSDAY 10-11-12

CLASS
NOTES

(43) $x^2 = 9 - y^2$

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

(44) $9x^2 = 36 + 4y^2$

$\frac{9x^2}{36} - \frac{4y^2}{36} = \frac{36}{36}$

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

hyperbola

(45) $x^2 + 3 = y$

$y = x^2 + 3$

parabola

(46) $2x^2 + y^2 = 8$

$\frac{x^2}{4} + \frac{y^2}{8} = 1$ ellipse



$$(47) \quad 4y^2 = 25 - 4x^2$$

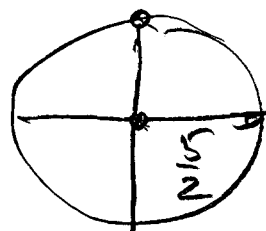
$$4x^2 + 4y^2 = 25$$

$$\boxed{x^2 + y^2 = \frac{25}{4}} \quad \text{circle}$$

or

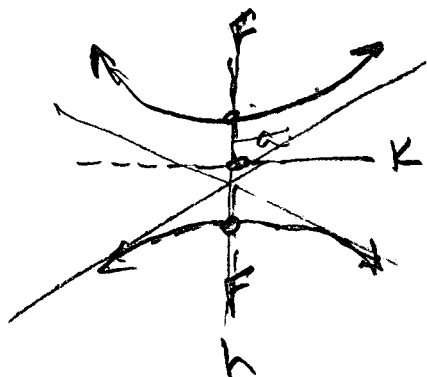
$$\frac{4x^2}{25} + \frac{4y^2}{25} = 1$$

$$\frac{x^2}{\frac{25}{4}} + \frac{y^2}{\frac{25}{4}} = 1$$



Pg 431
Ex:

$$x^2 + 2x - y^2 + 2y = -4$$



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

CT & CT

$$C(-1, 1)$$

h, k

$$\begin{cases} a=2 \\ b=2 \end{cases}$$

$$c^2 = a^2 + b^2$$

$$c^2 = 8$$

$$c = 2\sqrt{2}$$

$$\text{Foci } (-1, 1 \pm 2\sqrt{2})$$

$$\text{Vertices } (-1, 1 \pm 2)$$

$$m = \pm \frac{a}{b} = \frac{2}{2} = 1$$

54) $2x^2 - 8x + 5y^2 + 20y = 12$

$$2x^2 - 8x + 5y^2 + 20y = 12$$

$$2(x^2 - 4x + \{2^2\}) + 5(y^2 + 4y + \{2^2\}) = 12 + \{28\}$$

$$2(x-2)^2 + 5(y+2)^2 = 40$$

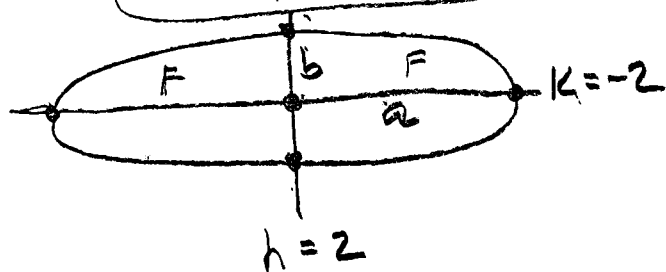
$$\frac{(x-2)^2}{20} + \frac{(y+2)^2}{8} = 1$$

ELLIPSE

$a^2 \rightarrow$
 $a = 2\sqrt{5}$

$C(2, -2)$

$b^2 \rightarrow$
 $b = 2\sqrt{2}$



$$c^2 = a^2 - b^2$$

$$c^2 = 12$$

$c = 2\sqrt{3}$

Foci $(2 \pm 2\sqrt{3}, -2)$

V $(2 \pm 2\sqrt{5}, -2)$

Co Ver. $(2, -2 \pm 2\sqrt{2})$