TUGAS KELOMPOK MINGGU 8

KALKULUS II

Kelompok 3 :

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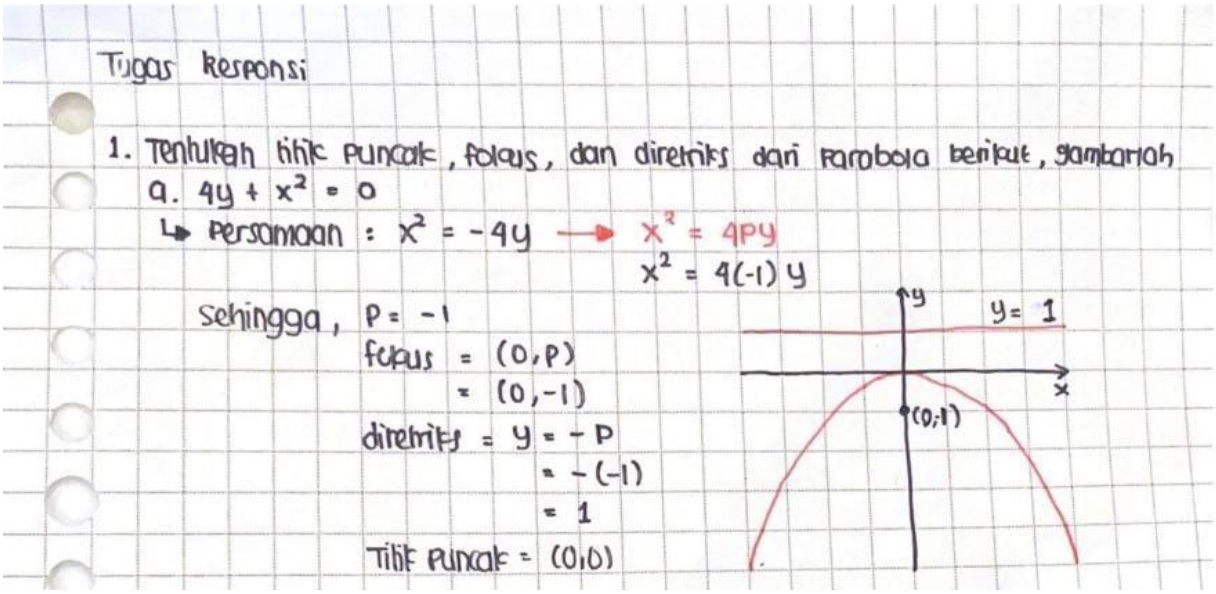
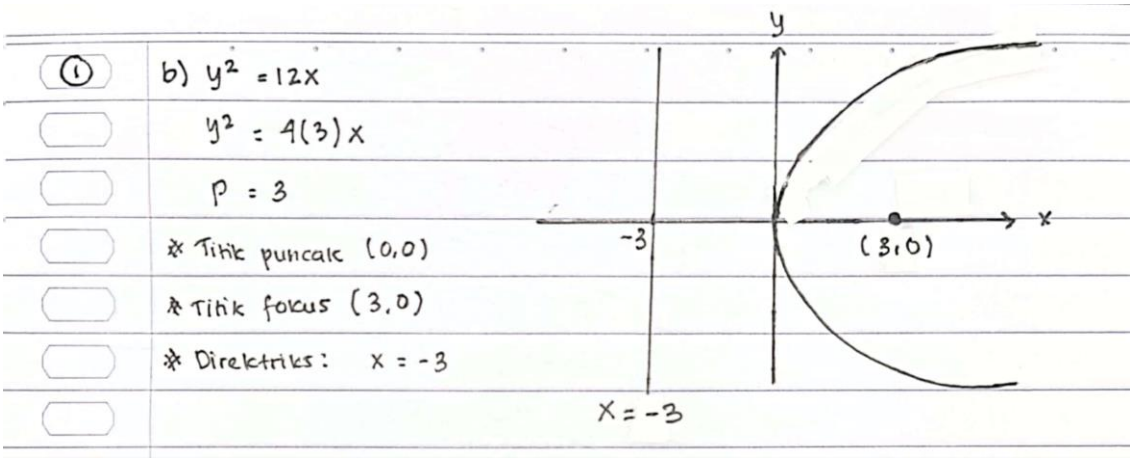
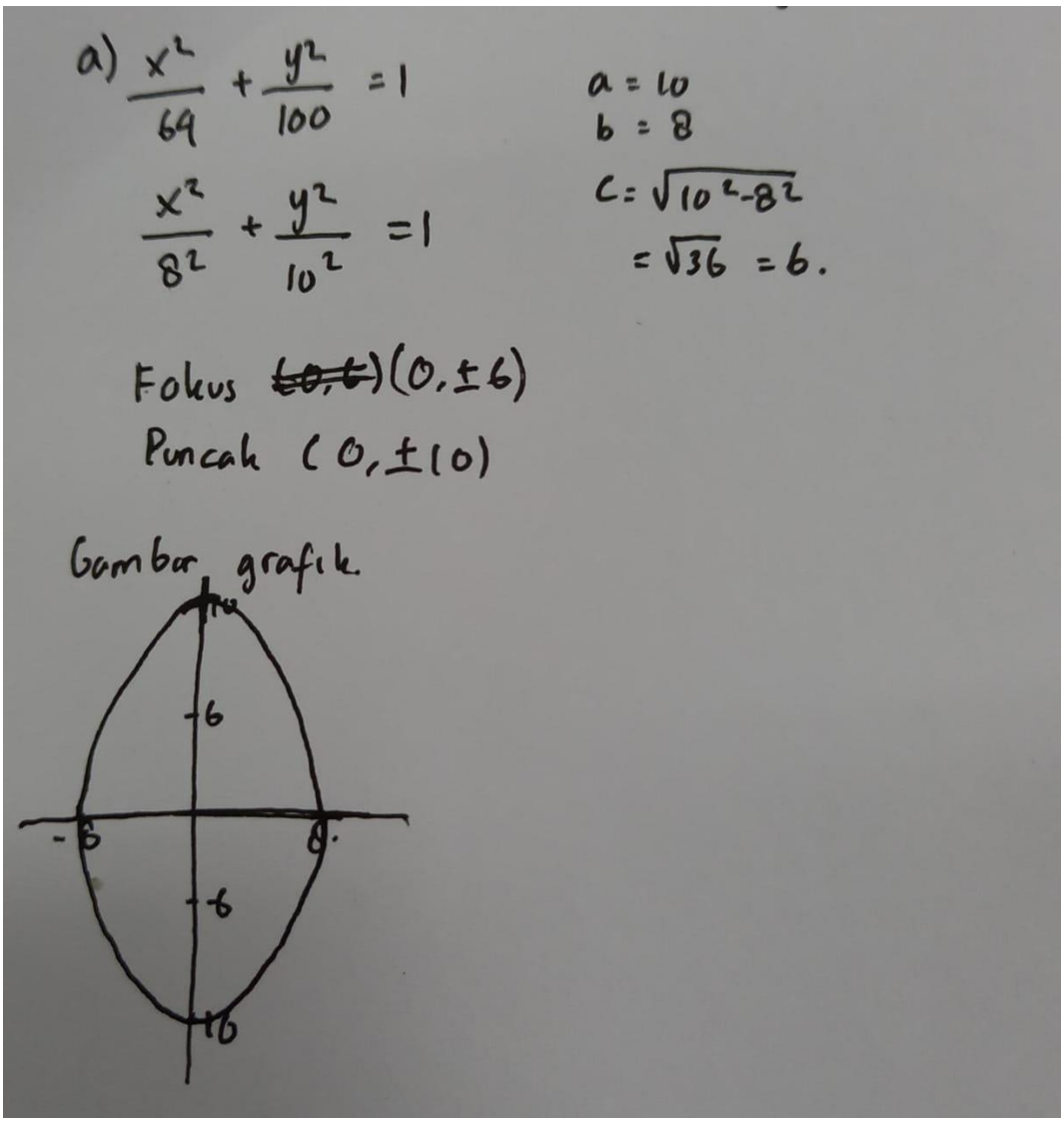
Nomor 1a.



Nomor 1b.



Nomor 2a.



Nomor 2b.

No.
Date

② b) $25x^2 + 9y^2 = 225$

↳ $\frac{1}{9}x^2 + \frac{1}{25}y^2 = 1$

$a \geq b > 0$

$a = 5$

$b = 3$

$c = \sqrt{5^2 - 3^2}$

$= 4$

* Titik puncak

$(0, \pm 5)$

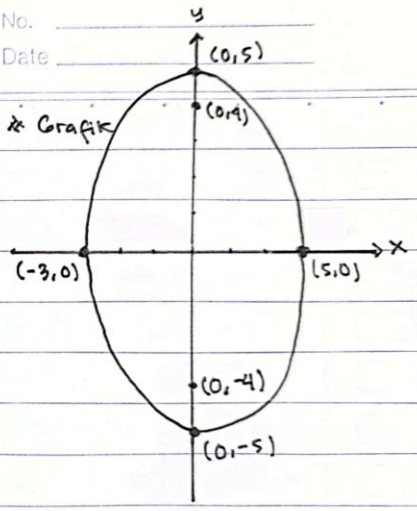
* fokus

$(0, \pm 4)$

* keeksentrikan

$e = \frac{c}{a} = \frac{4}{5}$

* Grafik



Nomor 3a.

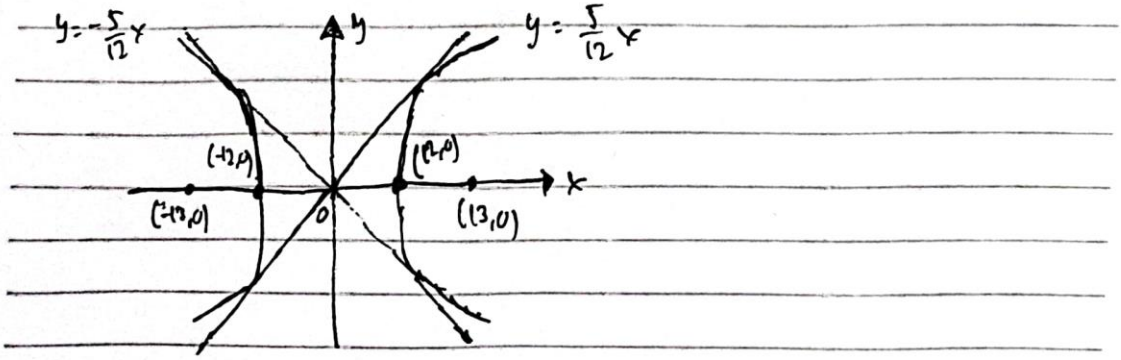
No. : Date. :

3. Tentukan titik puncak, fokus, dan garis asimtot hiperbola berikut, serta gambarkan lah !

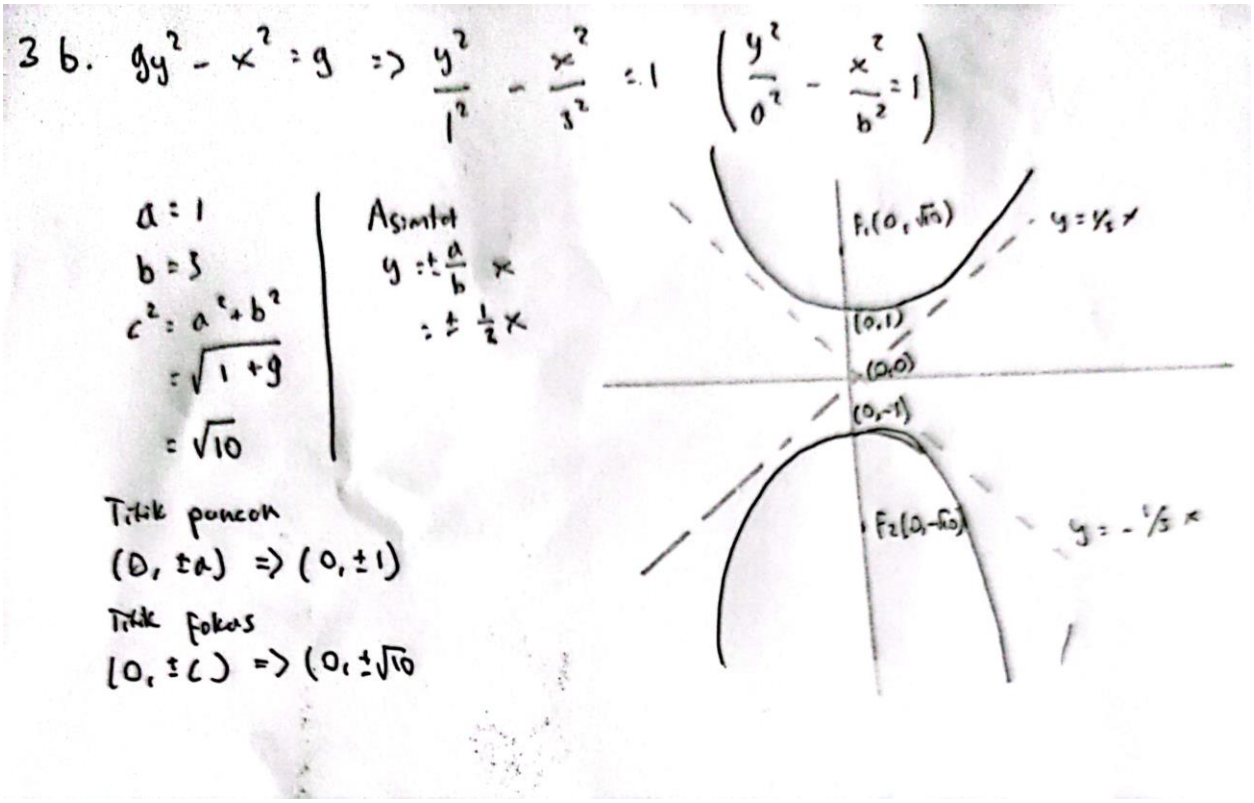
a. $\frac{x^2}{144} - \frac{y^2}{25} = 1$

$\Rightarrow \frac{x^2}{12^2} - \frac{y^2}{5^2} = 1$

- titik puncak $(\pm 12, 0)$
- Fokus $= \sqrt{12^2 + 5^2} = 13 = (\pm 13, 0)$
- asimtot : $y = \pm \frac{5}{12} x$



Nomor 3b.



Nomor 4a.

4) Tentukan persamaan
a) Parabola dengan titik puncak (0,0) dan fokus (0,-2)

$x^2 = 4py$
$x^2 = 4(-2)y$
$x^2 = -8y$

Nomor 4b.

(4b) persamaan irisan kerucut
Parabola dengan fokus (1,0) dan direktris $x = -1$

↳ Jawab

$p = 1$

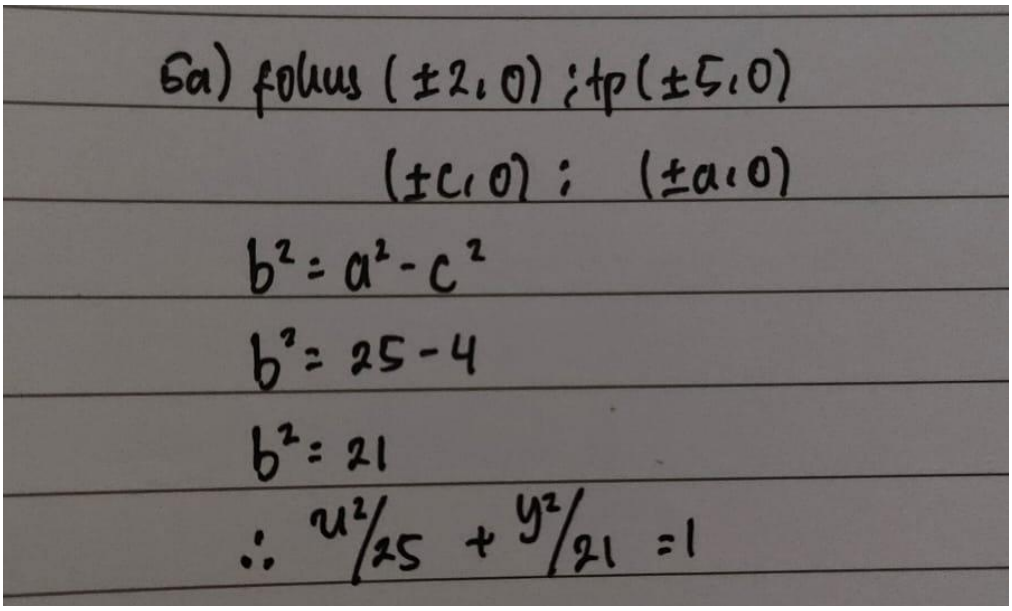
$x = -1$

persamaannya $\boxed{y^2 = 4px}$

$y^2 = 4(1)x$

$y^2 = 4x$ //

Nomor 5a.



Nomor 6a.

(6a) Persamaan irisan kerucut Hiperbola
fokus $(0, \pm 3)$
titik puncak $(0, \pm 1)$

↳ Jawab

$c = 3$
$a = 1$

$c^2 = a^2 + b^2$
$3^2 = 1^2 + b^2$
$b^2 = 9 - 1$
$b^2 = 8$

persamaan $\boxed{\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1}$

$\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1$

$\frac{y^2}{1} - \frac{x^2}{8} = 1$ atau $8y^2 - x^2 = 8$ //

Nomor 6b.

6) b) Hiperbola, titik puncak $(\pm 3, 0)$ dan asimtot $y = \pm 2x$

$a = 3$

$y = \pm 2x$

$y = \pm \left(\frac{b}{a}\right)x$

$\pm 2x = \pm \left(\frac{b}{3}\right)x$

$b = 6$

Persamaan :

$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$

$\Leftrightarrow \frac{x^2}{3^2} - \frac{y^2}{6^2} = 1$

$\Leftrightarrow \frac{x^2}{9} - \frac{y^2}{36} = 1 \rightarrow 36x^2 - 9y^2 = 324$ //