

INVERSES AND CONIC SECTIONS = A REFRESHER

A. INVERSES (see book: ^{11.3} p.20, ^{1.4} p.24, ^{1.5} p.33)

If f and g are inverses

$$f(g(x)) = g(f(x)) = x \text{ (identity function)}$$

or...

$$f^{-1}(y) = x \text{ means } y = f(x).$$

• Question 1. FIND INVERSE FUNCTIONS FOR

a, $f(x) = e^{2x} + 1$

b, $g(x) = 2 \ln(x)$

c, $s(x) = \cos(x - \pi/6)$

B. CONIC SECTIONS circles, ellipses (parabolas, hyperbolas)

$$Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$$

↑
ROTATIONS.

• Question 2. a) Find the radius of the circle $x^2 + y^2 = 25$, $r =$ _____

b, Make a sketch of it, below.

c, What is $y = \sqrt{25 - x^2}$?

• Question 3. a) Find the values for the semimajor & semiminor axes of the

$$\text{ellipse } \frac{x^2}{25} + \frac{y^2}{9} = 1. \begin{cases} a = \underline{\hspace{2cm}} \\ b = \underline{\hspace{2cm}} \end{cases}$$

b, Make a sketch of it, tonight

c, What is $y = 3\sqrt{1 - x^2/25}$?

