

Group: _____ Present: _____

1. In this exercise we graph a relation and its inverse

First graph the relation defined parametrically by $x = t, y = t^2 - 4$ for $-3 \leq t \leq 1$. Use the viewing window $[-10, 10] \times [-10, 10]$, with $t \in [-3, 1]$ and TSTEP = 0.1. Trace the curve to see some points in the relation.

Now give the parametric equations for the inverse relation:

$$x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}, -3 \leq t \leq 1$$

Now graph the inverse (use X_{2T} and Y_{2T} so you can see both relations graphed at once). Trace this curve too. What is the geometric relationship between the two graphs?

2. Consider the relation $R : y = x^2 - x$. This relation is actually a function; is the inverse relation of R a function?

Now, let's graph the inverse relation.

The inverse relation R^{-1} has equation $x = \underline{\hspace{2cm}}$.

Solve this equation for y :

$$y = \underline{\hspace{2cm}}$$

Is this a function?

How many functions should we graph to get a graph of R^{-1} ? _____

Graph $R : Y_1 = x^2 - x$ and

$$Y_2 = \underline{\hspace{2cm}}$$

$R^{-1} :$

$$Y_3 = \underline{\hspace{2cm}}$$

(Use the ZDECIMAL window - use FUNCTION mode!)