

Group: _____ Present: _____

1. Graph $Y_1 = x + 1$ and $Y_2 = \sqrt{x}$.

Domain of Y_1 : _____; Range of Y_1 : _____

Domain of Y_2 : _____; Range of Y_2 : _____

Next graph $Y_3 = Y_1 + Y_2 = (x + 1) + \sqrt{x}$

Domain of Y_3 : _____; Range of Y_3 : _____

Graph $Y_3 = Y_1 - Y_2 = (x + 1) - \sqrt{x}$

Domain of Y_3 : _____; Range of Y_3 : _____

Graph $Y_3 = Y_1 Y_2 = (x + 1)\sqrt{x}$

Domain of Y_3 : _____; Range of Y_3 : _____

Graph $Y_3 = \frac{Y_1}{Y_2} = \frac{(x+1)}{\sqrt{x}}$

Domain of Y_3 : _____; Range of Y_3 : _____

Graph $Y_3 = Y_1(Y_2) = Y_1(\sqrt{x})$

Domain of Y_3 : _____; Range of Y_3 : _____

Graph $Y_4 = Y_2(Y_1) = Y_2(x + 1)$

Domain of Y_4 : _____; Range of Y_4 : _____

(Only the TI-82 and TI-83 handle the compositions correctly as $Y_1(Y_2)$ and $Y_2(Y_1)$.
On other calculators you need to key in the formula in terms of x)

2. Parametric equations. With your grapher in PARAmetric mode, enter $X_{1T} = T^3 - T$ and $Y_{1T} = 1 - T^2$. In WINDOW, enter TMIN = -1, TMAX = 1 and TSTEP = 0.05. Use the ZDECIMAL viewing window. Then adjust the window settings (XMIN, XMAX, YMIN, YMAX only) to get a good graph. Trace to find the coordinates of the points on the relation when:

$t = -1, (x, y) = \underline{\hspace{2cm}}, t = -\frac{1}{2}, (x, y) = \underline{\hspace{2cm}},$

$t = 0, (x, y) = \underline{\hspace{2cm}}, t = \frac{1}{2}, (x, y) = \underline{\hspace{2cm}},$

$t = 1, (x, y) = \underline{\hspace{2cm}}.$

Change TMAX to 3. How has the graph changed?

$t = 2, (x, y) = \underline{\hspace{2cm}}, t = 3, (x, y) = \underline{\hspace{2cm}}$

Experiment with other values of TMIN and TMAX.

What TMIN and TMAX do you get with ZSTANDARD?

$T \in [\underline{\hspace{2cm}}, \underline{\hspace{2cm}}]$