KEY Algebra 2 – Mixed Six – Review of the use of the calculator. Calculator-Active

Round your answers to three places after the decimal.

1. Factual Recall

Use your calculator to approximate the following.

a) $\sqrt{35.5}$ 5.958

b) $(2.3)^4$ 27.984

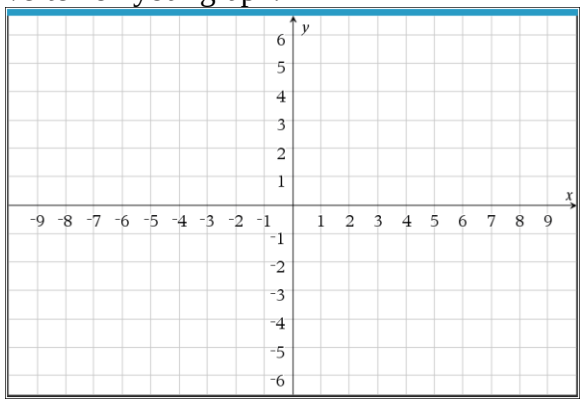
c) $\sqrt[3]{18.7}$ 2.654

d) $(17.1)^{2/3}$ 6.637

2. Carry out a Procedure

Factor x^2-2x-3.

Use the factors to sketch the quadratic function $f(x)=x^2-2x-3$. Label the zeros and the vertex on your graph.



b) Graph the parabola on your calculator to check your zeros and vertex. See page 2.

3. Classify a Mathematical Object

$f(x)=x^3-4x^2+2x+1$

Graph the cubic polynomial function and find the roots (or zeros) of the function. Decide if the statements below are True or False.

T/F	Statement
T	The function *f* has 3 real roots.
F	The function *f* has 2 rational roots and 1 irrational root.
T	The function *f* has 1 rational root and 2 irrational roots.
F	The function *f* has 3 irrational roots.
F	The function *f* has 3 rational roots.

3 Real roots: 1 is a rational root, –0.303 and 3.303 are irrational roots.

4. Prove, Show, Justify

Graph functions $f(x)=(x-2)^2+4$ and $g(x)=x^2-4x+8$ on your calculator to show that *f* and *g* are equivalent.

See graph on page 2.

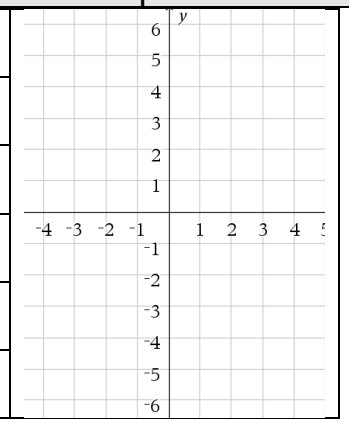
Expand $f(x)$ to show that it is equivalent to $g(x)$.

$f(x)=(x-2)^2+4=(x^2-4x+4)+4$

$=x^2-4x+8$

5. Extend a Concept

x	y
–2	–6
–1	–4
0	–1
1	2
2	4



a) Plot the points on the *xy*-plane above and draw a line of best fit.

b) Use your calculator to find the linear regression and correct your graph if needed.

$y = 2.6x - 1$ See page 3 for the plot.

6. Critique a Fallacy

Susan is working with the function $g(x)=2^x+1$.

She states that the *y*-intercept is 1 because all exponential functions go through the point (0, 1). Is Susan correct? Graph the function *g* on your calculator and use the graph to correct her statement.

Susan forgot that this function is an exponential function with a vertical translation of 1. The *y*-intercept would be 2.

See graph on page 3.

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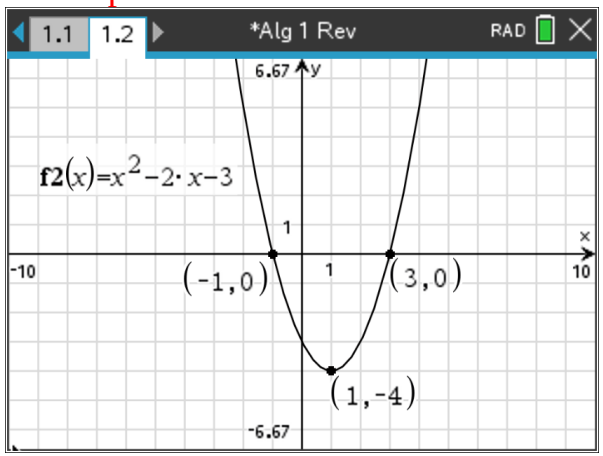
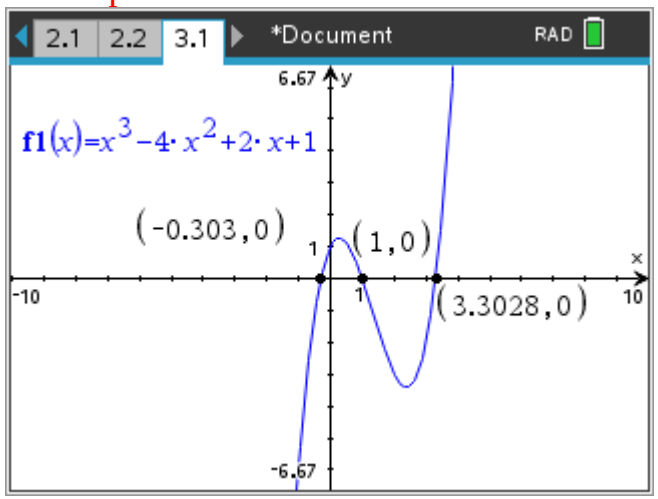
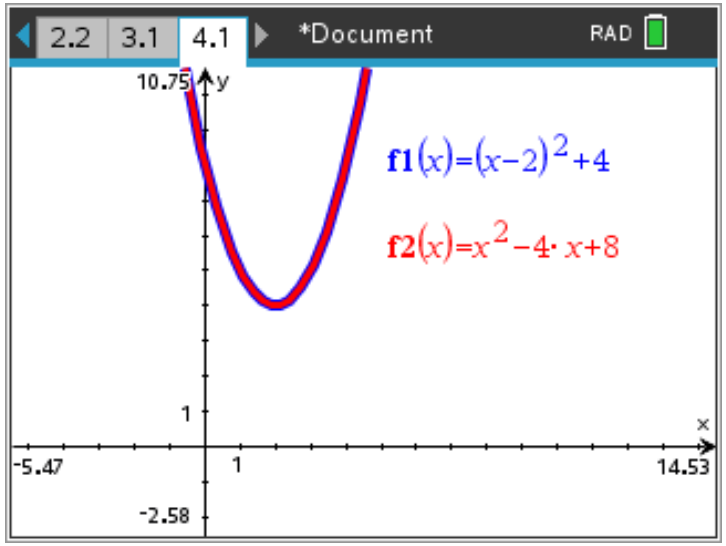
#2 Graph



#3 Graph with zeros



#4 Graph



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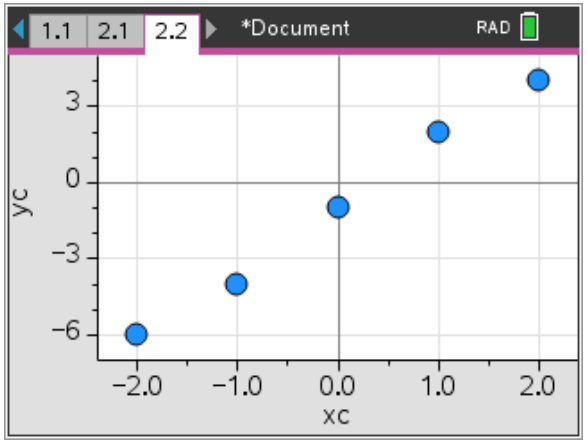
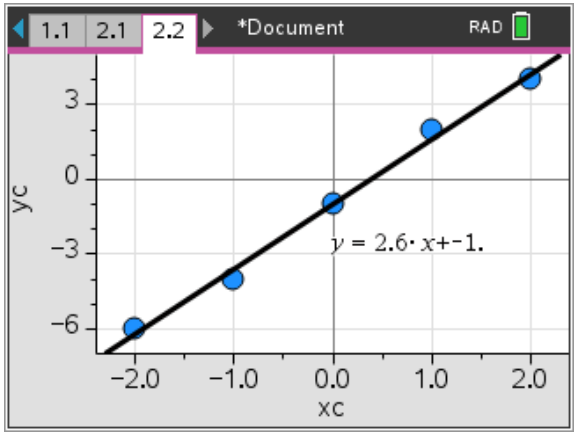
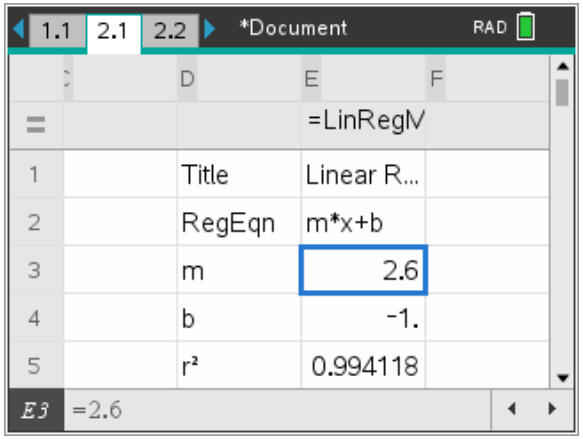
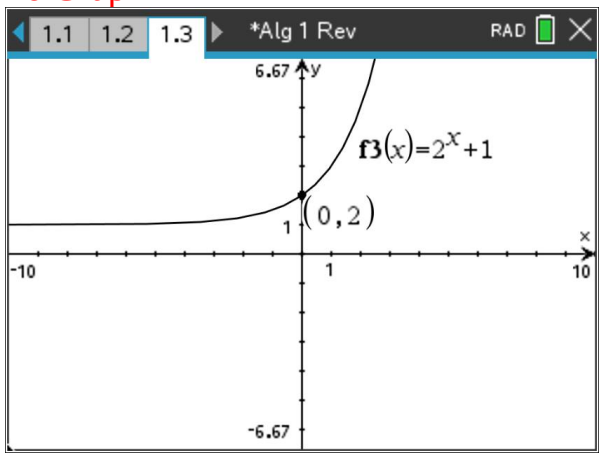
#5 Plot







#6 Graph



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