KEY Algebra 1 – Mixed Six – Using the calculator to complete this task. Calculator-Active

Round your answers to the nearest tenth.

1. Factual Recall

Use your calculator to approximate the following.

a) $\sqrt{42.5}$ 6.5

b) $(-2.4)^4$ 33.2

c) $\sqrt[3]{20}$ 2.7

d) $\frac{24}{7}$ 3.4

2. Carry out a Procedure

You are shopping for a new coat. You look at the selection that is marked down 30% and find exactly what you want. The coat is on sale for \$76.30. What was the original cost of the coat?

C = original cost of the coat

$C - 0.30C$ = marked down price

$C - 0.30C = 76.30$

$0.7C = 76.3$

$C = \frac{76.3}{0.7} = 109$

The original cost of the coat was \$109.

3. Classify a Mathematical Object

For each pair of linear equations, use your calculator to determine if they represent functions with:

I. One solution

II. Infinite solutions

III. No Solution

I/II/III	Pair
I	$y = 2x - 3$ $y = -4x + 2$
III	$y = 2x - 3$ $4x - 2y = 1$
II	$y = 2x - 3$ $4x - 2y = 6$

4. Prove, Show, Justify

Graph the linear function $y = \frac{1}{2}x - 2$ on your calculator.

Find the rate of change between the points with x-coordinates of –4 and 0.

Also find the rate of change between the points with x-coordinates of –4 and 6.

Explain why these rates of change are equal.

$\frac{-2-(-4)}{0-(-4)} = \frac{2}{4} = \frac{1}{2}$; $\frac{1-(-4)}{6-(-4)} = \frac{5}{10} = \frac{1}{2}$;

Linear functions have a constant rate of change. The rate of change is the slope of the line.

5. Extend a Concept

The formula for the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. If a cone has a volume of 220 cubic inches and a height of 10.4 inches, what is the radius of the cone?

$220 = \frac{1}{3}\pi r^2 (10.4)$

$r^2 = \frac{220(3)}{\pi(10.4)} = 20.200435$

$r = 4.49449$

The radius of the cone is approximately 4.5 inches.

6. Critique a Fallacy

Your class is given the following table of values:

x	y
–2	–7
1	4
0	–1
2	2
–2	5

Susan says that the table represents a linear function.
Tom says that the table does not represent a function.
Sam says that the table represents a nonlinear function.

Which student is making the correct statement and why?

Tom is making the correct statement. The table cannot represent a function because the graph would contain both (–2, –7) and (–2, 5).

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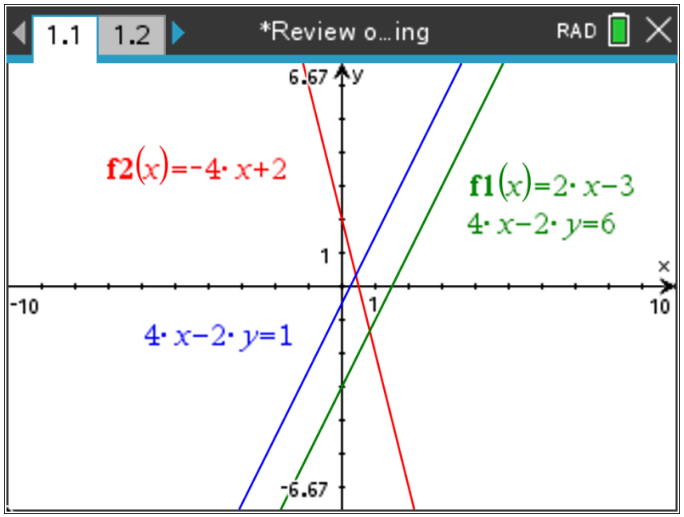
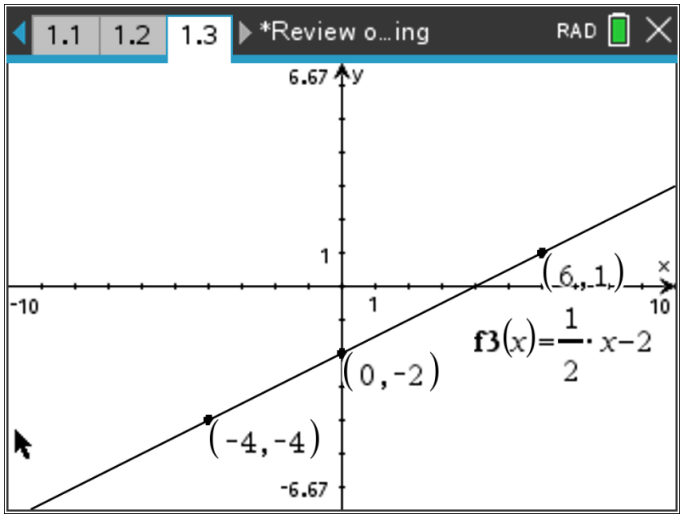
#3 Graph



#4 Graph



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