

Day 04 - Abs Value TI-Nspire activity (bad activity - break it up) [Compatibility Mode] - Microsoft Word

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Clipboard Font Paragraph Styles Editing

Times New Rom 12 A A Aa

B I U abc x<sub>2</sub> x<sup>2</sup> ab A

AaBbCcDc AaBbCcDc AaBbCc AaBbCc

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Find Replace Select

4. Graph the following functions:

$$y = |x| + 2$$

$$y = |x| - 2$$

$$y = |x| + 4$$

$$y = |x| - 4$$

→ +2, -2, +4, -4

d) Compare the graphs. If  $y = |x| + k$ , how does the value of  $k$  change the graph.

- The value of  $k$  makes the graph shift up on the y-axis if  $k$  is positive
- The value of  $k$  makes the graph shift down on the y-axis if  $k$  is negative.

5. The vertex is the point where both of the lines meet in an absolute value graph. It is the maximum or minimum output of the graph. Graph the following functions and write down the vertex point.

$$y = |x| + 2 \quad \text{Vertex} =$$

$$y = |x - 3| + 2 \quad \text{Vertex} =$$

$$y = |x - 3| - 4 \quad \text{Vertex} =$$

$$y = |x + 1| - 6 \quad \text{Vertex} =$$

$$y = 2|x + 5| - 1 \quad \text{Vertex} =$$

e) Compare each vertex to its original equation

See  
snapshot

Content

Documents



Documents Toolbox

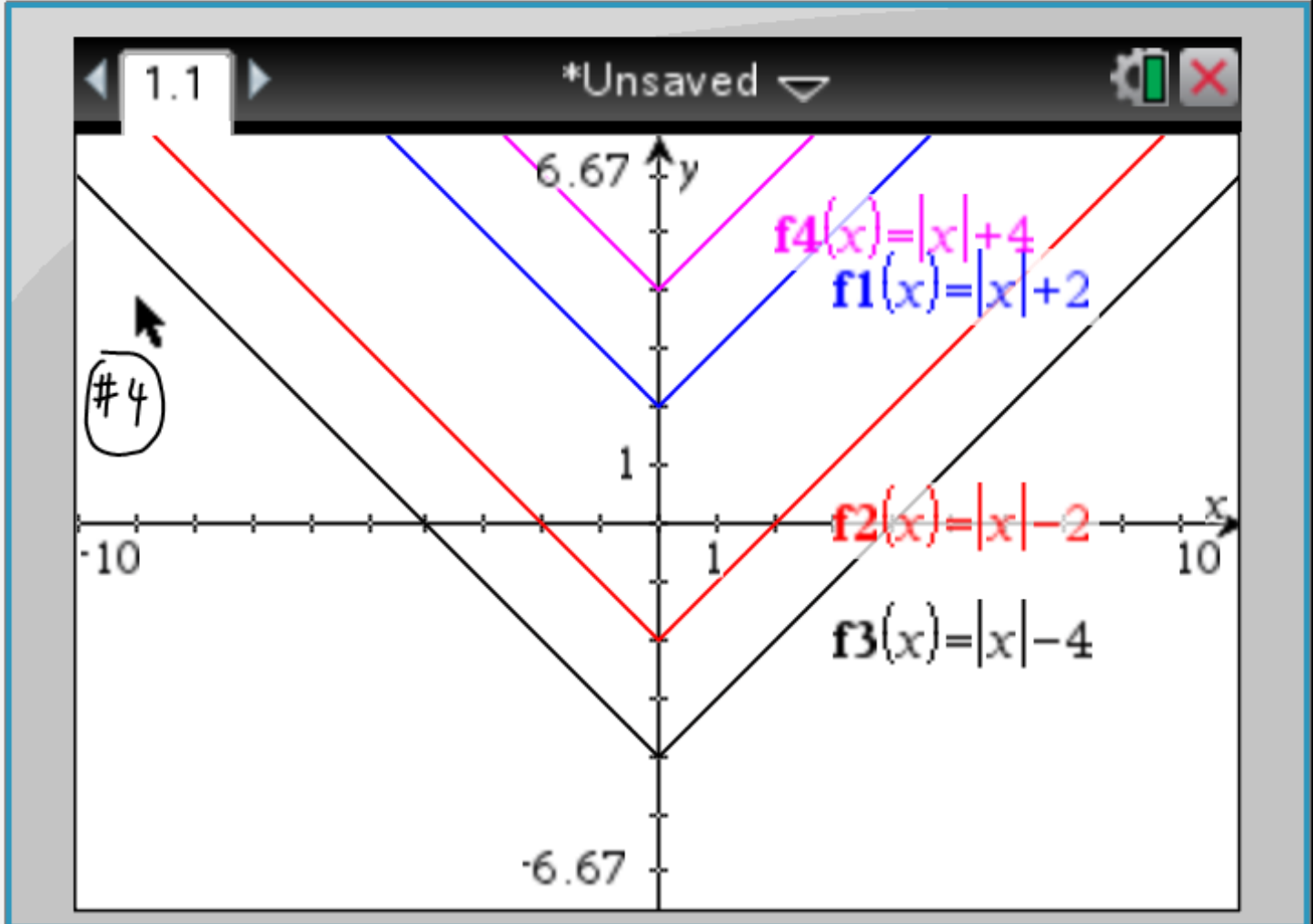


Keypad + SideScreen

TI-Nspire™ Keypad + SideScreen interface with various function keys and a numeric keypad.

Buttons: esc, save, tab, on, + page, doc, menu, ctrl, CAPS, shift, var, clear, del, trig, 7, 8, 9, 4, 5, 6, x, ÷, 1, 2, 3, +, -, e<sup>x</sup>, 10<sup>x</sup>, 0, ., (-), enter, EE, A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, O, P, Q, R, S, T, U, V, W, X, Y, Z, ?!>

TEXAS INSTRUMENTS



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5. The vertex is the point where both of the lines meet in an absolute value graph. It is the maximum or minimum output of the graph. Graph the following functions and write down the vertex point.

$$y = |x| + 2 = |x+0| + 2 \quad \text{Vertex} = (0, 2)$$

$$y = |x - 3| + 2 \quad \text{Vertex} = (3, 2)$$

$$y = |x - 3| - 4 \quad \text{Vertex} = (3, -4)$$

$$y = |x + 1| - 6 \quad \text{Vertex} = (-1, -6)$$

$$y = 2|x + 5| - 1 \quad \text{Vertex} = (-5, -1)$$

e) Compare each vertex to its original equation

To find the vertex, simply look at the h and K.

Ex:  $y = \frac{1}{3}|x+2| - 1$

opposite of +2 is -2  
So  $-2 = h$

$K = -1$

General Pattern:

$$f(x) = a|x-h| + K$$

$$\text{vertex} = (h, K)$$

So vertex is  $(-2, -1)$ .

TI-Nspire™ Keypad + SideScreen interface showing various function keys (esc, save, tab, ctrl, caps, shift, var, clear, del) and a numeric keypad with mathematical symbols (trig, x², log, e^x, 10^x, etc.).

