

Name: _____

Date: _____

Calculator in hand! Two expressions are equivalent if their graphs sit exactly on top of each other (or tables match). Last two are challenge.

1. Graph $f_1(x) = (x+2)(x+3)$ and $f_2(x) = x^2 + 5x + 6$. What do you see?

show your work

2. What does 'identical graphs' prove?

show your work

3. Check with a table (ctrl+T): $f_1 = (x+1)^2$ vs $f_2 = x^2 + 1$. Equivalent?

show your work

4. What is the CORRECT expansion of $(x+1)^2$? Verify on the calculator.

show your work

5. Verify your factoring: does $x^2 - 5x + 6 = (x - 2)(x - 3)$?

show your work

6. A student claims $(x + 4)(x - 4) = x^2 - 8$. Test at $x = 1$ by hand AND by table.

show your work

7. Use zeros: graph $f_1(x) = x^2 - 8x - 20$ and find both zeros. What factors do they reveal? (Trainer echo!)

show your work

8. Verify $3x(x - 8) = 3x^2 - 24x$ with a table. Which x -values make both 0?

show your work

9. A student expands $(2x + 3)(x - 5)$ as $2x^2 - 7x - 15$. Check by table; if wrong, find and fix the error. ★ CHALLENGE

show your work

10. Two functions look identical on screen but differ past the window. How can a TABLE settle it? Test $f_1 = x^2$ and $f_2 = x^2 + 0.001x$ at $x = 1000$. ★ CHALLENGE

show your work