

1 Kittens

February 2, 2020 4:18 PM

EVERY TIME YOU DO THIS:



$$f(x) = \frac{x^2 + 2x + 1}{x^2 + 3}$$

(Handwritten notes: The fraction is crossed out with a blue X. To the right, $(x^2+1)(2x+1)$ is written above (x^2+3) with a blue checkmark. Below the main fraction, $= \frac{2x+1}{3}$ is written.)

A KITTEN DIES.

EVERY TIME YOU DO THIS:



$$(a+b)^2 = a^2 + 2ab + b^2$$
$$(x^2+3)^2 = x^4 + 9 + 2(3)x^2$$

(Handwritten notes: The second term is $6x^2$. Below, $\sqrt{x^2+9} = x+3$ is crossed out with a blue X. To the right, $\sqrt{(x+3)(x+3)} = \sqrt{x^2+6x+9} = x+3$ is written with a^2 and b^2 crossed out.)

A PUPPY DIES.

EVERY TIME YOU DO



THIS:

$$\frac{-7}{-21} = +\frac{1}{3}$$

(Handwritten note: A green arrow points to the $\frac{1}{3}$ part of the result.)

THIS OWLET JUST CAN'T EVEN.

Images from <http://mathcurmudgeon.blogspot.ca/2014/01/do-this-and-bunny-dies.html>

"Math Magic Tricks"

Examples

$$\star a^2 - b^2 = (a + b)(a - b)$$

$$x^2 - 9 = (x+3)(x-3)$$

$$\star (a + b)^2 = a^2 + 2ab + b^2$$

$$(x+5)^2 = x^2 + 10x + 25$$

$$\star (a - b)^2 = a^2 - 2ab + b^2$$

$$(2x-3)^2 = (2x)^2 - 2(2x)(3) + 3^2 \\ = 4x^2 - 12x + 9$$

$$\star \frac{a-b}{b-a} = -1 \quad \frac{\cancel{x-2}}{\cancel{2-x}} = -1$$

$$\frac{a-b}{-a+b} = \frac{a-\cancel{b}}{-1(\cancel{a}/b)} = \frac{1}{-1} = -1$$

$$\frac{a-b}{-a+b} = -1$$

An Error to Avoid

It is vital to remember that only factors can be divided, not terms. In a question like example 4, a common error is to do the following.

$$\frac{x^2 + 5x + 6}{x^2 + x - 6} = \frac{5x + 6}{x - 6}$$

← DO NOT DO THIS!