

**FOOLS' RULES**  
GUARANTEED WAYS TO FAIL MATH AND  
ANNOY YOUR TEACHERS

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

2.  $\frac{a+b}{a} = 1 + b$

3.  $(a + b)^2 = a^2 + b^2$

4. Or we can generalize 3 to get

$$(a + b)^n = a^n + b^n$$

5.  $\log_a(x + y) = \log_a(x) + \log_a(y)$  or, with the special case of base  $e$ ,

$$\ln(x + y) = \ln(x) + \ln(y)$$

6.  $\sin(a + b) = \sin(a) + \sin(b)$

7.  $\int x^2 e^x dx = x^2 \int e^x dx$  or the more sophisticated

$$\int x^2 e^x dx = \int x^2 dx \int e^x dx$$

8. And the all time favorite

$$\sqrt{a + b} = \sqrt{a} + \sqrt{b}$$

and its corollary  $\sqrt{a^2 + b^2} = \sqrt{a^2} + \sqrt{b^2} = a + b$ .