Name _____

# Algebraic Atrocities

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| Statement | True or False | Correction |
|---|---|---|
| 1. $\frac{3}{a}+\frac{3}{b}=\frac{3}{a+b}$ | _____ | _____ |
| 2. $\frac{a+b}{c+d}=\frac{a}{c}+\frac{b}{d}$ | _____ | _____ |
| 3. $\frac{a+b}{c}=\frac{a}{c}+\frac{b}{c}$ | _____ | _____ |
| 4. $\frac{a}{b+c}=\frac{a}{b}+\frac{a}{c}$ | _____ | _____ |
| 5. $\frac{10t+u}{10u+v}=\frac{t}{v}$ | _____ | _____ |
| 6. $\frac{a}{b}=\frac{a^2}{b^2}$ | _____ | _____ |
| 7. $\frac{a+b}{b}=a$ | _____ | _____ |
| 8. $\frac{1}{a+b}+(a+b)^2=a+b$ | _____ | _____ |
| 9. $2a^{-1}=\frac{-1}{2a}$ | _____ | _____ |
| 10. $a^{-2}=-a^2$ | _____ | _____ |
| 11. $(a-b)^2=a^2-b^2$ | _____ | _____ |
| 12. $(a+b)^2=a^2+b^2$ | _____ | _____ |

13. $(a+b)^3 = a^3 + b^3$ _____ _____

14. $\sqrt{a^2} = a$ _____ _____

15. $\sqrt{a^2 + b^2} = a + b$ _____ _____

16. $\sqrt{a^2 - b^2} = a - b$ _____ _____

17. $\sqrt{a+b} = \sqrt{a} + \sqrt{b}$ _____ _____

18. $\frac{1}{3}(-6)^3 = -2^3$ _____ _____

19. $a^{\frac{2}{3}} = \frac{a^2}{a^3}$ _____ _____

20. $\frac{\sin a}{a} = \sin(1)$ _____ _____

21. $\frac{\sin 2a}{a} = \sin(2)$ _____ _____

22. $\sin(2A) = 2\sin(A)$ _____ _____

23. $\sin(A+B) = \sin(A) + \sin(B)$ _____ _____

24. $\cos(2A) = 2\cos(A)$ _____ _____

25. $\cos(A+B) = \cos(A) + \cos(B)$ _____ _____

26. $\log(a+b) = \log(a) + \log(b)$ _____ _____

27. If $a+b=0$, then either $a=0$ or $b=0$ _____ _____

28. If x(x-2)=24, then either $x=24$ or $x-2=24$ _____ _____

29. $a\,(bc) = (ab)\,(ac)$ _____ _____

30. If $\log(a) = b$, then $a = \frac{b}{\log}$ _____ _____

31. If $\sin(a) = b$, then $a = \dfrac{b}{\sin}$ _____ _____

32. If $\cos(a) = b$, then $a = \dfrac{b}{\cos}$ _____ _____

33. If $\tan(a) = b$, then $a = \dfrac{b}{\tan}$ _____ _____

34. $Sin^{-1}(x) = \dfrac{1}{\csc(x)}$ _____ _____

35. $Tan^{-1}(x) = \dfrac{1}{\cot(x)}$ _____ _____

36. $Cos^{-1}(x) = \dfrac{1}{\sec(x)}$ _____ _____

37. $Sin^{-1}(x) = \dfrac{1}{\sin(x)}$ _____ _____