

State whether the statement is true or false (T or F).

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

13.  $2(x)^n = (2x)^n$

24.  $\sqrt{x^2 + y^2} = x + y$

2.  $(xy)^n = x^n y^n$

14.  $\frac{a}{ax} = x$

25.  $\frac{1}{\sqrt{x} + \sqrt{y}} = \sqrt{x} + \sqrt{y}$

3.  $(2x)^2 = 2x^2$

15.  $\frac{1}{x^{-n}} = x^n$

26.  $\frac{1}{0} = 0$

4.  $\frac{ab + ac}{a} = b + c$

16.  $\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$

27.  $x^0 = 0$

5.  $\frac{a}{ab + ac} = \frac{1}{b + c}$

17.  $x \log a^m = \log a^{mx}$

28.  $\frac{a}{b} + \frac{c}{d} = \frac{a + c}{b + d}$

6.  $\frac{4x + 3y}{w} = \frac{4x}{w} + \frac{3y}{w}$

18.  $\log x \cdot \log w = \log(x + w)$

29.  $\frac{a}{b} \cdot \frac{c}{d} = \frac{ad}{bc}$

7.  $\frac{w}{4x + 3y} = \frac{w}{4x} + \frac{w}{3y}$

19.  $-2^4 = 16$

30.  $a(x + y)^n = (ax + ay)^n$

8.  $\frac{ab + ac + d}{aw} = \frac{b + c + d}{w}$

20.  $-x^2 = x^2$

31.  $\frac{x + 2}{x + 5} = \frac{2}{5}$

9.  $\frac{\log a}{\log b} = \log a - \log b$

21.  $\frac{\sqrt{xy}}{x} = \sqrt{y}$

32.  $3x + 3x = 6x^2$

10.  $\log ab = \log a + \log b$

22.  $\frac{-a}{\frac{b}{c}} = \frac{ac}{b}$

33.  $1^{-1} = -1$

11.  $\frac{\ln a}{\ln b} = \frac{a}{b}$

23.  $\frac{a}{\frac{b}{c}} = \frac{ab}{c}$

34.  $a^2 + b^2 = (a + b)(a - b)$

12. If  $\ln a = \ln b$ , then  $a = b$

35.  $a^3 - b^3 = (a - b)(a^2 + 2ab + b^2)$