

Name: _____

Algebra Review Problems

1. Determine if each statement is correct or incorrect

A) $\frac{\ln M}{\ln N} = \ln M - \ln N$

B) $\frac{1}{\sqrt[3]{z-5}} = (z-5)^{-1/3}$

C) $\frac{1}{x^{-1}+1} = \frac{x}{x+1}$

D) $\frac{At^2+B}{t} = At+B$

E) $(-x^2)^3 = x^6$

F) $(x+3)^n = x^n + 3^n$

G) $\sqrt{y^2+64} = y+8$

H) $\frac{1}{4y^2} = (4y)^{-2}$

I) $(2x+4)^3 = 8(x+2)^3$

J) $5^{3 \log_5 x} = x^3$

K) $\ln 1 = e$

2. Perform the indicated operation and simplify:

$$\frac{5}{\sqrt{1-z^2}} - 3\sqrt{1-z^2} =$$

3. Perform the indicated operation and simplify:

$$\frac{2y(y^3+1)^2 - 6y^4(y^3+1)}{(y^3+1)^4}$$

4. Solve for h : $h - 27h^{-2} = 0$

5. Solve for y in terms of x : $3 + 2y = x^2y + 5x$

6. Solve for h_1 : $A = \frac{1}{2}b(h_1 + h_2)$

7. Solve for z : $2 + 3e^{2z} = 7$

8. Solve for p : $\frac{2p^2 + 5p - 3}{p - 5} = 0$

9. Solve for x : $\ln(mx + b) - 2 = 0$

10. Solve for t : $4t^2e^{at} - 6te^{at} = 0$

11. Simplify as much as possible: $\frac{5n-10}{4-n^2}$ assume that $n \neq \pm 2$

12. Simplify A) $(a+1)^5(a+1)^{x-5} =$ and B) $\frac{x^n 4^{n+1}}{4^n x^{n+1}}$

1. Simplify $\frac{(b+1)^x}{(b+1)^{2x-3}} =$

2. Simplify (no negative exponents in final answer): $\frac{2(y+1)^{1/2} - y(y+1)^{-1/2}}{y+1} =$

3. Perform the indicated operation and simplify $\frac{1-2t}{\sqrt{t+3}} + 2\sqrt{t+3} =$

4. Solve for y in terms of x : $2(3y+2) = x^2y + x^3$

5. Solve for t : $\ln(t+2) - \ln t = \ln 5$

6. Solve for y : $6y^{-2} + y = 0$

7. Solve for m : $\frac{(m^2-5)(2m+3)}{m-4} = 0$

8. Solve for t : $8te^{3t} + 4t^2e^{3t} = 0$

9. Solve for x : $(x-4)(x+2) = 7$