




Inverse functions and nonlinear equations

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January 29, 2011

Look at three or four or twenty my quizzes
and then fill in my _____ please!

To create your own test from based on this one
you will need free [AcroT_EXeDucation bundle](#),
the T_EX source attached here  and to fol-
low instruction on [home site](#).





If the function $y = f(x)$ is one-to-one, then the inverse function f^{-1} exists and $x = f^{-1}(y)$. Hence the inverse function can be used to solve the relation $y = f(x)$ with respect to x .

Quiz Solve the equations. Follow the pattern on the left and complete the right hand side of the equation.

1.

$$9 - \ln(3x - 1) = 0$$

$$\ln(3x - 1) =$$

$$3x - 1 =$$

$$3x =$$

$$x =$$

2.

$$e^{x-1} - 4 = 0$$

$$e^{x-1} =$$

$$x - 1 =$$

$$x =$$

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3.

$$9 - \sqrt{e^x - 1} = 0$$

$$\sqrt{e^x - 1} =$$

$$e^x - 1 =$$

$$e^x =$$

$$x =$$

4.

$$3 \sin(x - 1) + 1 = 0$$

$$\sin(x - 1) =$$

$$x - 1 =$$

$$x =$$

5.

$$2e^{2x-1} - 1 = 0$$

$$e^{2x-1} =$$

$$2x - 1 =$$

$$x =$$



6.

$$2 + 3 \ln(7 - x) = 0$$

$$\ln(7 - x) =$$

$$7 - x =$$

$$x =$$

Quiz Complete the statements.

1. If $y = \sin x$, then $x =$

2. If $y = \arccos x$, then $x =$

3. If $x = 1 + \ln y$, then $y =$

4. If $\operatorname{atan}(2x + 1) = y$, then $x =$

5. If $x - 4 = 2e^y$, then $y =$

6. If $x^2 + 1 = \ln y$, then $y =$

7. If $x - 1 = \arcsin(1 + y)$, then $1 + y =$
and hence $y =$





8. If $e^x = 4$, then $x =$

9. If $\ln(x + 2) = 3$, then $x =$

10. If $\tan(x - 4) = 1 + y$, then $x =$

11. If $e^{x+6} = \frac{1}{2}$, then $x =$

12. If $4 + \ln x = 2$, then $x =$

13. If $6 \ln(y + 3) = x^3$, then $y =$

14. If $1 + a \tan \sqrt{y} = x$, then $y =$

15. If $\ln \frac{y}{y+1} = x + 2$, then $\frac{y}{y+1} =$
and hence $y =$

16. If $e^{\sqrt{1-y}} = 2x$, then $\sqrt{1-y} =$
and hence $y =$

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