

### 37 Exponential Equations

Due:

12/15/2015 at 06:00am EST.

Students will be able to:

- Solve exponential equations
- Solve quadratic in form exponential equations
- Use properties of exponents to solve equations

**Functions and symbols that WeBWorK understands.**

**Links to some useful WeBWorK pages for students**

1. (1 pt) Solve the equation

$$9^{6x} + 3 \cdot 9^{3x} - 4 = 0$$

$$x = \underline{\hspace{2cm}}$$

**Note:** If there is more than one solution, enter your solutions separated by a comma.

2. (1 pt) Solve the equation

$$4^{x+1} = 2^{3x-5}$$

$$x = \underline{\hspace{2cm}}$$

3. (1 pt) Solve the equation.

$$3^{2x+2} = 2^{x-3}$$

$$x = \underline{\hspace{2cm}}$$

If there is more than one solution, present your solutions in a comma separated list.

4. (1 pt) If  $e^{6x} = 23$ , then  $x = \underline{\hspace{2cm}}$ .

5. (1 pt) Find the solution of the exponential equation

$$6^x = 9$$

$$x = \underline{\hspace{2cm}}$$

6. (1 pt) Find the solution of the exponential equation:

$$18^{1-x} = 4$$

$$x = \underline{\hspace{2cm}}$$

7. (1 pt) Find the solution of the exponential equation

$$2 + 10^{5x} = 26$$

correct to at least four decimal places.

$$x = \underline{\hspace{2cm}}$$

8. (1 pt) Solve the equation:  $e^{2x+1} = 12$

$$x = \underline{\hspace{2cm}}$$

9. (1 pt) Find the solution of the exponential equation

$$2^{2x+2} = 3^{x-50}$$

$$x = \underline{\hspace{2cm}}$$

10. (1 pt) Solve the equation

$$x^2 2^x - 2^x 12 = 0.$$

$$x = \underline{\hspace{2cm}}$$

If there is more than one solution, enter your solutions separated by comma.

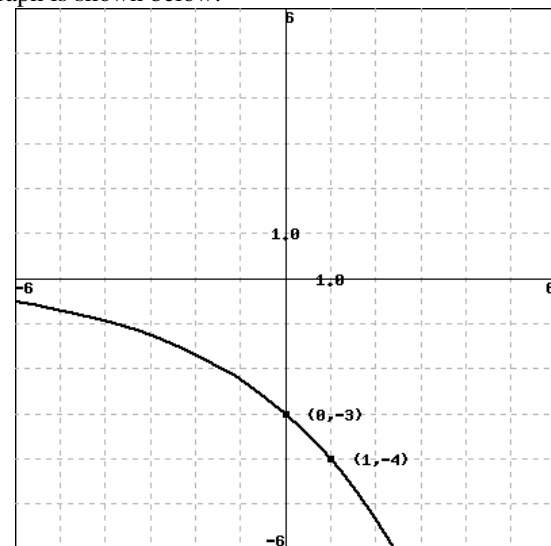
11. (1 pt) Solve the equation

$$e^{2x} - 5e^x + 6 = 0.$$

$$x = \underline{\hspace{2cm}}$$

If there is more than one solution, enter your solutions as a comma separated list.

12. (1 pt) Find the exponential function  $f(x) = a \cdot 2^{bx}$  whose graph is shown below:



$$a = \underline{\hspace{2cm}}, b = \underline{\hspace{2cm}}$$