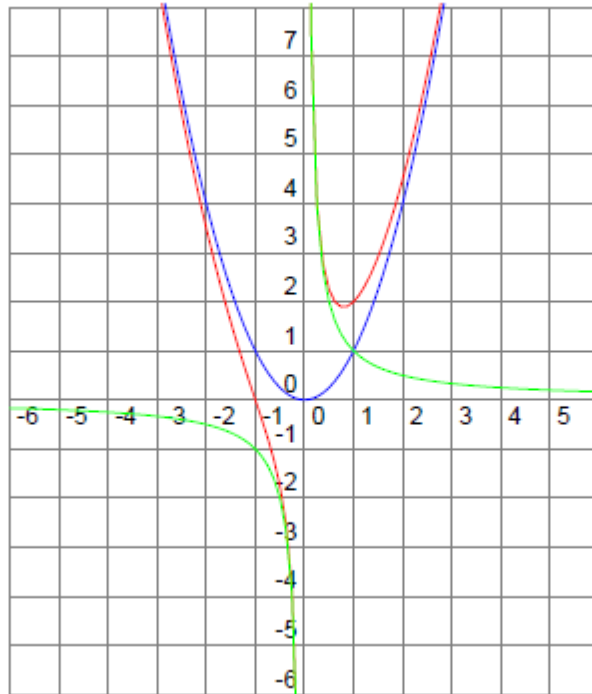


Math 6a/b: Homework 15  
Homework #15 is due February 3th.

### *Adding Graphs*

In class we drew a graph of the function  $y = x^2 + \frac{1}{x}$

We carefully examined  $y = x^2$  (blue) and  $y = 1/x$  (green) and looked at what happens if one adds these two graphs (red).



### *Homework*

For the homework, please do the same as the above example (i.e. use different colors) for the following graphs:

1.  $y = x + \frac{1}{|x|}$

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

3.  $y = x - \frac{1}{x^2}$

(Optional) You can check your graphs **AFTER** you finish at: <http://fooplot.com/>. Type the first function in the panel on the right, then use *Add* to type the second function which you are adding to the first.

Revision from math 5:

4. Simplify the following and show the answer in the exponent (power) form

$$(a) \frac{3^7 \cdot 2^7}{2^3 \cdot 2^4} =$$

$$(b) \frac{6^5 \cdot 2^4}{3^5 \cdot 2^2} =$$

$$(c) \frac{7^9 \cdot 2^5}{7^2 \cdot 2^4} =$$

$$(d) \frac{11^4}{11^2 \cdot 5^2 \cdot 5^3} =$$

$$(e) 7^4 \cdot 11^2 \cdot 11^{-5} \cdot 7^2 =$$

$$(f) \frac{3^{-5} \cdot 2^7}{3^{-3} \cdot 2^4} =$$

$$(g) \frac{42^2}{6^2} =$$

$$(h) \frac{3^5 \cdot 3^{-5}}{3^9} =$$

$$(i) \frac{x^2 \cdot y^2 \cdot x^{-3}}{x^2} =$$

5. Compute, but be very attentive to signs and the order of operations (first: operations in brackets, then multiplication or addition, then addition or subtraction). Show all the steps!

$$(a) (-5 - 9) \div (-2) + 7 =$$

$$(b) -2(-5 - 9) - 7 \times 4 =$$

$$(c) -9 + 14 \div (-2) + 7 =$$

$$(d) (-2) \times (-2) \times (-2) \times (-2) \times (-2) =$$

$$(e) -16 \div (-8) =$$

$$(f) -16 \div 8 =$$

$$(g) 16 \div (-8) =$$