ECON 2500
Fall 2009
Dr. Tufte

Homework 6 Key

Due: Friday, September 18, at the start of class.

Do only parts (a) and (c) of each problem. There is no partial credit: if you get all of them right I won't make you do more of these, but if you miss one or more, I'll make you do (b) and (d) for a grade.

You may work on these together. You may use any resource you have available, as long as you show some of your work. All answers must be handwritten, with clearly circled answers.

1) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(7^3)(7^4) = 7$ 7
   b) $(71^5)(71^6) = 71$
   c) $(27^{31})(27^9) = 27$ 40
   d) $(734^{23})(734^4) = 734$

2) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(x^7)(x^4) = x$ 11
   b) $(y^2)(y^6) = y$
   c) $(z^{21})(z^9) = z$ 30
   d) $(p^{23})(p^5) = p$

3) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(7^3)^5 = 7$ 15
   b) $(71^5)^2 = 71$
   c) $(27^{31})^7 = 27$ 217
   d) $(734^{23})^4 = 734$

4) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(x^2)^5 = x$ 10
   b) $(y^5)^4 = y$
   c) $(p^{31})^5 = p$ 155
   d) $(q^{23})^8 = q$

5) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(7^3)(7^{-4}) = 7$ −1
   b) $(71^{-5})(71^{-6}) = 71$
   c) $(27^{-31})(27^{-9}) = 27$ 40
   d) $(734^{-23})(734^4) = 734$

6) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(q^{-3})(q^{-4}) = q$ −7
   b) $(p^{-95})(p^{-6}) = p$
   c) $(x^{731})(x^{-9}) = x$ 722
   d) $(\beta^{-3})(\beta^4) = \beta$

7) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(7^3)^{-5} = 7$ −15
   b) $(71^5)^{-2} = 71$
   c) $(27^{-31})^{-7} = 27$ 217
   d) $(734^{-23})^4 = 734$

8) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(\alpha^{-3})^{-5} = \alpha$ 15
   b) $(\gamma^5)^3 = \gamma$
   c) $(\delta^{31})^7 = \delta$ 217
   d) $(x^3)^{-4} = x$

9) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(7^{.3})(7^4) = 7$ 4.3
   b) $(71^{.5})(71^{.6}) = 71$
   c) $(27^{-31})(27^{.9}) = 27$ −30.1
   d) $(734^{-.23})(734^{-.4}) = 734$

10) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(x^{.4})(x^1) = x$ 1.4
   b) $(y^{.5})(y^{.76}) = y$
   c) $(z^{-3})(z^{.9}) = z$ −2.1
   d) $(q^{-.43})(q^{-.4}) = q$

11) What exponent do you need to add to the right hand side to satisfy the equality?
   a) $(7^3)^{.5} = 7$
   b) $(71^{.5})^2 = 71$
   c) $(27^{-31})^{.7} = 27$
   d) $(734^{.23})^{.4} = 734$

12) What exponent do you need to add to the right hand side to satisfy the equality?

a) $(x^3)^{.6} = x$ 1.8

b) $(y^{.5})^{32} = y$

c) $(q^{-3.1})^{.7} = q$ -2.17

d) $(r^{.3})^{.4} = r$

13) Finish the equation (using an exponent)

a) $\frac{1}{x} =$ X^{-1}

b) $\frac{14}{x} =$

c) $\frac{21}{x^3} =$ $21X^{-3}$

d) $\frac{17}{x^{-1}} =$

14) Finish the equation (using a fraction)

a) $x^{-1} =$ $1/X$

b) $x^{-3} =$

c) $3x^{-2} =$ $3/X^2$

d) $11x^{-2} =$

15) What is:

a) $x^1 =$ X

b) $q^1 =$

c) $(xyz)^1 =$ XYZ

d) $(x^2y)^1 =$