Math 05, Homework 8 on Sections 6.3 - 6.7
Extra Credit.

As usual, write all your working out and answers on a separate sheet. These first ten questions are 2 points each and **their solutions are on page 2**. Check that you get the same answers. If you don't, then look at your notes or the book or ask me. Only do the last eight questions when you are sure you understand the first ten.

It is very important that you show clearly any work you had to do to get your answers. Just writing the answer down with no work shown is not enough.

(1) Find the values of: **(a)** 2^3,   **(b)** 2^0,   **(c)** 2^{-3}

(2) Find the value of: $\left(\dfrac{2}{3}\right)^{-2}$

(3) Simplify (the answer should contain only positive powers): $\dfrac{m^4 \cdot m^{-5}}{m \cdot m^3}$

(4) Simplify: $\dfrac{75x^{-3}(y^{-2})^{-4}}{5y^3x^3}$

(5) Convert into scientific notation: **(a)** 0.0000038,   **(b)** 674000

(6) Simplify: $(6x^2)(3x^4)$

(7) Multiply out: $(2x-5)^2$

(8) Simplify completely: $(2x-4)(x^2+3x-3)$

(9) Divide: $\dfrac{10x^3+15x}{5x}$

(10) Divide: $\dfrac{6x^{15}-8x^9-4x^4}{-2x^4}$

These next eight questions are 2 points each. Show clearly all your working out and reasoning.

(11) Find the value of: $-\left(\dfrac{1}{5}\right)^{-2}$

(12) Simplify: $\dfrac{w^2 \cdot w^3(w^2)^3}{w^{-5} \cdot w^{-5}}$

(13) Simplify: $\dfrac{4x^6(y^{-3})^5}{(2x^3)^2y^{-15}}$

(14) Convert into scientific notation: **(a)** 0.00099,   **(b)** 52000000

(15) Multiply out: $(3y - 4)^2$

(16) Simplify completely: $(-3x + 5)(x^2 - 4x - 5)$

(17) Divide: $\dfrac{6x^4 + 7x^2}{x}$

(18) Divide: $\dfrac{-4x^{17} + 6x^8 - 8x^3}{-2x^3}$

Answers to questions (1)-(10):

(1)   **(a)** 8   **(b)** 1   **(c)** $1/8$

(2) $9/4$

(3) $\dfrac{1}{m^5}$

(4) $\dfrac{15y^5}{x^6}$

(5)   **(a)** 3.8×10^{-6},   **(b)** 6.74×10^5

(6) $18x^6$

(7) $4x^2 - 20x + 25$

(8) $2x^3 + 2x^2 - 18x + 12$

(9) $2x^2 + 3$

(10) $-3x^{11} + 4x^5 + 2$