

Math 05, Homework 8 on Sections 6.3 - 6.7
Hand in by Tue, Mar 29 at the start of class.

Write all your working out and answers on a separate sheet. It is very important that you show clearly any work you had to do to get the answer. These first ten questions are 2 points each and **the answers are on page 2.**

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

(2) Simplify: $\frac{m^4 \cdot m^{-5}}{m \cdot m^3}$

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

(4) Convert into scientific notation: (a) 0.0000038, (b) 670000

(5) Convert into scientific notation: (a) $(6 \times 10^{-2})(7 \times 10^{-4})$, (b) $\frac{4 \times 10^{-2}}{5 \times 10^{20}}$

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

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

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

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

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

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

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

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

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

(14) Convert into scientific notation: (a) $(9 \times 10^6)(8 \times 10^5)$, (b) $\frac{2 \times 10^5}{5 \times 10^{-11}}$

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

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

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

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

Answers to questions (1)-(10):

(1) $\frac{9}{4}$

(2) $\frac{1}{m^5}$

(3) $\frac{15}{x^6y^{11}}$

(4) **(a)** 3.8×10^{-6} , **(b)** 6.7×10^5

(5) **(a)** 4.2×10^{-5} , **(b)** 8×10^{-23}

(6) $18x^6$

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

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

(9) $2x^2 + 3$

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