Math 05, Homework 7 on Sections 5.4 - 6.3

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) Graph the two lines $x + 2y = 4$ and $x - y = 1$ on the same axes and estimate the point where they meet.

(2) Solve the system of equations:

$$2x + 3y = 11$$
$$x - y = 3$$

(3) What is the value of the x-coordinate of the solution to the system:

$$3x - 2y = 10$$
$$-4x - 3y = -2$$

(4) Find the degree and find the number of terms of the polynomial $w^5 + 10w^3 - 3w^2 + 99w$

(5) Add the polynomials: $x^3 + 4x - 5$ and $2x^2 + 3x + 4$

(6) Subtract $6y^2 - 4y$ from $-3y^4 - 9y^2 + 10y$.

(7) Simplify completely: $(9x^2 - 17x + 8) - (-2x^2 - 3x + 4)$

(8) Simplify: $(3x^4)(7x^5)(2x)$

(9) Simplify: $\dfrac{24a^6b^7c^2}{3a^3bc^2}$

(10) Simplify: $(-2x^2)^3(3x^2)^3$

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

(11) Graph the two lines $-2x + y = 2$ and $-x + 2y = -2$ on the same axes and estimate the point where they meet.

(12) Solve the system of equations:

$$5x + 2y = 20$$
$$5x - 3y = -5$$

(13) Find the degree and find the number of terms of the polynomial $5x^2 - \sqrt{7}x - \frac{1}{100}$

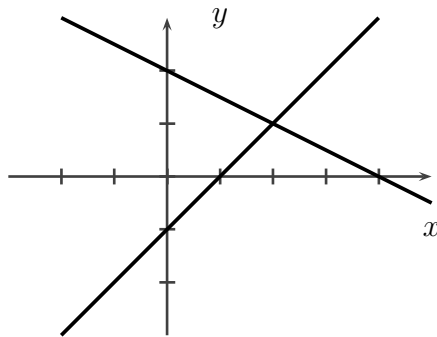**(14)** Add the polynomials: $2x^2 - x - 5$ and $6x^2 + 8x - 1$

(15) Simplify completely: $(-4x^2 - 15x + 3) - (9x^2 - 6x + 5)$

(16) Simplify: $(y^3)(5y^5)(4y^2)$

(17) Simplify: $(-4x^3)^2(2x^4)^4$

(18) Simplify: $\dfrac{a^{-3} \cdot a^6}{a^9 \cdot a^{-7}}$

Answers to questions (1)-(10):

(1) The lines meet at the point $(2, 1)$.

(2) Solution is $(x, y) = (4, 1)$.

(3) The x-coordinate of the solution is 2.

(4) The degree of the polynomial is 5 and it has 4 terms.

(5) $x^3 + 2x^2 + 7x - 1$

(6) $-3y^4 - 15y^2 + 14y$

(7) $11x^2 - 14x + 4$

(8) $42x^{10}$

(9) $8a^3b^6$

(10) $-216x^{12}$

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