Math 05, Homework 9 on Sections 7.1 - 7.4

Write all your working out and answers on your own notepaper - no need to write the questions. Please use lots of space.

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. Every question is worth 2 points.

The solutions to these first 10 questions 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.

(1) Factor this number completely: 60

(2) Factor by finding the greatest common factor (GCF):   **(a)** $10x + 20$ **(b)** $10x^2 + 21$

(3) Factor by finding the GCF: $6x^3 + 15x^2$

(4) Factor by finding the GCF: $14x^3y - 7x^2y - 21xy^2$

(5) Factor the differences of squares: **(a)** $x^2 - 9^2$ **(b)** $81 - 25x^4$

(6) Factor: $x^2 + 100$

(7) Factor completely: $50x^3 - 18x$

(8) Factor: $x^2 + 7x + 10$

(9) Factor: $x^2 - 3x - 18$

(10) Factor completely (find the GCF first): $5x^3 - 55x^2 + 150x$

Eight more questions[1]. Show clearly all your working out and reasoning.

(11) Factor this number completely: 126

(12) Factor by finding the GCF: $8x - 4$

(13) Factor by finding the GCF: $100x^4y - 50x^3 + 45x^2$

(14) Factor the differences of squares: **(a)** $x^2 - 64$ **(b)** $64y^2 - 49$

(15) Factor completely: $10x^2y - 40y^3$

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[1]questions continue on page 2

(16) Factor: $x^2 + 10x + 16$

(17) Factor: $x^2 - 15x + 36$

(18) Factor completely (find the GCF first): $2x^3 - 12x^2 - 32x$

Answers to questions (1)-(10):

(1) $2^2 \cdot 3 \cdot 5$

(2)   **(a)** $10(x + 2)$ **(b)** GCF= 1, does not factor

(3) $3x^2(2x + 5)$

(4) $7xy(2x^2 - x - 3y)$

(5)   **(a)** $(x + 9)(x - 9)$,   **(b)** $(9 + 5x^2)(9 - 5x^2)$

(6)   Not a difference of squares, does not factor

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

(8) $(x + 2)(x + 5)$

(9) $(x + 3)(x - 6)$

(10) $5x(x - 5)(x - 6)$