

**Math 05, Extra Credit Homework 10 on Sections 7.5 - 7.7, 8.1 - 8.3**

**Hand in by Tue, Apr 12 at the start of class.**

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

(2) Factor:  $2x^2 + 5x + 2$

(3) Factor:  $3x^2 - 37x + 44$

(4) Factor by grouping:  $x^3 + 3x^2 + 5x + 15$

(5) Factor by grouping:  $4ax + 3ay - 12bx - 9by$

(6) Factor completely:  $100x^2y - 144y^3$

(7) Evaluate or simplify: (a)  $-\sqrt{16}$ , (b)  $\sqrt{144}$ , (c)  $\sqrt{500}$

(8) Simplify:  $\sqrt{\frac{7}{9}}$

(9) Simplify:  $\sqrt{\frac{8}{3}}$

(10) Solve: (a)  $x^2 = 16$ , (b)  $x^2 + 20 = 0$

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These next eight <sup>1</sup> questions are 2 points each. Show clearly all your working out and reasoning.

(11) Factor:  $3x^2 + 10x + 3$

(12) Factor:  $3x^2 + x - 4$

(13) Factor by grouping:  $3cw + 6cz - 2dw - 4dz$

(14) Factor completely:  $8x^4 - 50x^2y^4$

(15) Evaluate or simplify: (a)  $\sqrt{49}$ , (b)  $-\sqrt{169}$ , (c)  $\sqrt{24}$

(16) Simplify:  $\sqrt{\frac{18}{7}}$

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<sup>1</sup>Two more questions on the next page

(17) Simplify:  $\frac{\sqrt{2}\sqrt{5}}{\sqrt{6}}$

(18) Solve: (a)  $x^2 = 2$ , (b)  $x^2 = -9$

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**Answers to questions (1)-(10):**

(1)  $(x - 3)(x - 12)$

(2)  $(2x + 1)(x + 2)$

(3)  $(x - 11)(3x - 4)$

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

(5)  $(a - 3b)(4x + 3y)$

(6)  $4y(5x + 6y)(5x - 6y)$

(7) (a)  $-4$ , (b)  $12$ , (c)  $10\sqrt{5}$

(8)  $\frac{\sqrt{7}}{3}$

(9)  $\frac{2\sqrt{6}}{3}$

(10) (a)  $x = \pm 4$ , (b)  $x = \pm 2\sqrt{5}i$