

NAME:

Factorizing Polynomials Quiz Feb 18, 2011

PART A - THE BASICS

1. Factor the binomial $10h^2 + 25h$ **(2M)** 2. Factor the trinomial $x^2 - 8x + 16$ **(2M)**
3. Factor the expression $x^2 - 49$ **(2M)** 4. Factor the trinomial $x^2 - 8x - 20$ **(2M)**
5. If the binomial $(x - 3)$ is one factor of $x^2 - 10x + 21$, which of the following is the other factor? **(2M)** 6. Explain HOW you determined your answer to Q5. **(1M)**
- a. $(x + 7)$
 - b. $(x + 5)$
 - c. $(x - 18)$
 - d. $(x - 7)$

PART B – APPLYING THE BASICS

7. Factor $9x^2 - 16$. **(2M)** 8. Factor $y^2 + 17y + 52$. **(2M)** 9. Factor $2x^2 + 8x - 90$. **(3M)**

PART B – APPLYING THE BASICS

10. In this question, you will work with the trinomial $8x^2 - 14x + 3$. **(6M)**
- (a) Factor the expression $8x^2 - 14x + 3$.
 - (b) To check if your answer is correct, expand and simply your 2 factors from Q10a.
 - (c) What do the results of your expansion tell you about your answer to Q10a.

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11. In this question, you will work with the trinomial $6m^2 + m - 12$. **(6M)**

(a) Factor the expression $6m^2 + m - 12$.

(b) To check if your factorization is correct, substitute $m = 2$ into $6m^2 + m - 12$.

(c) Now, substitute $m = 2$ into your factorized answer from Q11a.

(d) What do the results of the substitutions tell you about your answer to Q11a?

12. (a) What would be your first step in factorizing the expression $7x^4 - 28x^3 + 21x^2$? **(1M)**

(b) Now, complete the factorization of $7x^4 - 28x^3 + 21x^2$. **(2M)**

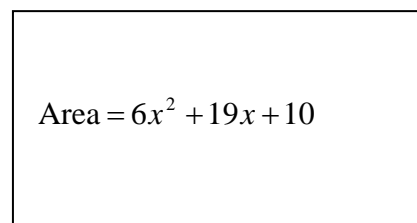
PART C - REASONING WITH THE BASICS

13. Factor $x^4 - 1$ completely. **(2M)**

14. Mr Santowski has asked Michael and Aaron to factor the expression $x^2 + x + 1$. Aaron says it can't be factored. But Michael thinks it can be factored. SHOW/EXPLAIN how you determined who is correct. **(2M)**

15. The area for the rectangle given in the diagram below is $6x^2 + 19x + 10$. The length of the rectangle is given to be $2x + 5$.

a. Determine the width of the rectangle. Explain how you determined the width. **(2M)**



b. If $x = 2$ find the area of the rectangle. **(1M)**

length = $2x + 5$