

Advanced Algebra 2 Classwork 3.2 - Radicals, i, Complex Numbers, Factoring

For #'s 1-6 Factor completely. Show all steps.

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|---|--|
| 1. $m^2 - 5m + 6$                                       | 2. $2x^3 + 6x^2 - 8x$                          |
| 3. $6x^2 - 13x + 6$                                     | 4. $25 - 81x^2$                                |
| 5. $2x^2 - 3x - 9$                                      | 6. $3x^4 - 75x^2$                              |
| 7. Simplify $i^{383}$                                   | 8. Simplify $\frac{i^{38}}{i^{109}}$           |
| 9. Simplify: $3\sqrt{27} + 5\sqrt{108} - 10\sqrt{75} =$ | 10. Simplify: $\sqrt{-8} \times i\sqrt{-28} =$ |
| 11. Simplify: $2(-3 + 2i) + 5(2 - i)$                   | 12. Simplify: $-3(-3 + 2i) - 2(2 - i)$         |
| 13. Multiply: $(-3 + 2i)(4 - 5i)$                       | 14. Divide: $\frac{3 - 2i}{10 + 5i} =$         |