Chapter 9 Test

Form A

Name _____

Date _____

1. Perform the indicated operation.
$(2x + 5) - (3x^2 + 7x - 5)$

1. _____

2. Perform the indicated operations.
$(3x + 2)(2x^2 - 7x - 4)$

2. _____

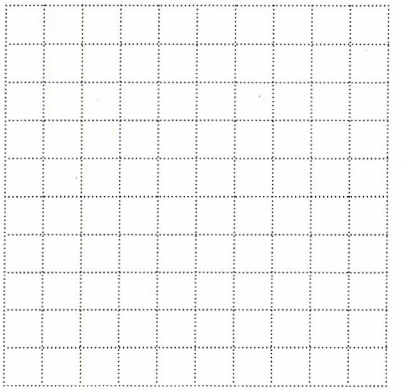
3. State the maximum number of turns in the graph of
$f(x) = 2x^3 - 2x^2 + 3$.

3. _____

4. State the left and right behaviors of the graph of
$f(x) = -x^3 + 7x + 4$.

4. _____

5. Sketch the graph of the function.
$f(x) = (x + 1)^4$



5. *Use graph at left.*

6. Factor completely with respect to the integers.
$10x^4 - 160$

6. _____

7. Factor completely with respect to the integers.
$4x^3 - 8x^2 + 3x - 6$

7. _____

8. Find all real-number solutions.
$x^3 + 6x^2 + 12x + 8 = 0$

8. _____

9. Use long division. Write the result in fractional form. **9.** _____

$(5x^4 - 3x^2 + 4) \div (x^2 + 2)$

10. Use synthetic division. Write the result in fractional form. **10.** _____

$(2x^3 + 9x^2 + 3x - 6) \div (x + 4)$

11. Use the Remainder Theorem to evaluate the function. **11.** _____

$f(x) = 2x^4 - 12x^2 - 20x - 3$ at $x = 3$

12. Write a polynomial function whose graph has the given x-intercepts and has a leading coefficient of 1. **12.** _____

$(2,\ 0), (-2,\ 0), (1,\ 0)$

13. Write the polynomial as a product of linear factors. **13.** _____

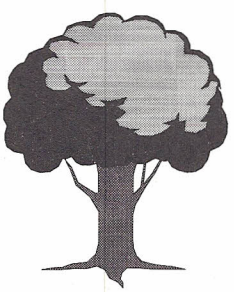
$x^3 - 2x^2 - 9x + 18$

14. Find all real zeros of the function. **14.** _____

$g(x) = 2x^3 - x^2 - 10x + 5$

15. ***Tree Heights*** The heights (in inches) of ten 5-year old maple trees are given below. Find the *range*, the *mean*, and the *standard deviation* of the data. **15.** _____

53, 47, 44, 47, 51, 45, 46, 47, 46, 50



16. ***Geometry*** Write an expression for the area inside the rectangle but outside the square. **16.** _____