Homework 5

This needs to be turned in by: July 29, at the beginning of class. Please write your work and answers on a separate sheet of paper and box your final answers. Don't forget your name.

1. Study Guide, p. 36 # 10 A and B

2. Study Guide, p.37 # 1 C, D, E, F, and H

3. Find the solution set to the following functions:
a. $|3x - 2| - 4 < -3$
b. $|2x - 1| < -1$
c. $|5x - 27| > -27$

4. Study Guide, p. 37 # 2

5. Study Guide, p. 38 # 3 A, B, C, and D

6. Study Guide, p. 42 # 1

7. Study Guide, p. 42 # 4

8. Study Guide, p. 43 # 5

9. Find the degree, leading term, leading coefficient, and constant term of each of the following polynomials:
a. $f(x) = -19x^7 + 5x^4 - 13x^2 + 2$
b. $y = x^5 - 4x$
c. $f(x) = 4x^{19} - 2x^{18} + x^{17} + x^{16} + x^{15} + x^{14} + 1$

10. State the Intermediate Value Theorem (Zero Version) (on p.241 of textbook)

11. If $f(x) = x^2 - 4$, then $f(1) = -1$ and $f(3) = 5$. What does the Intermediate Value Theorem (Zero Version) imply about $f(x)$ for $1 < x < 3$? Find that point.

12. Find the multiplicity of all the zeros of:
a. $f(x) = (x - 2)^2(x - 3)^4(x - 5)^3$
b $f(x) = x^2 + 4x + 4$

13. Study Guide, p.44 # 1 A and B

14. Study Guide, p. 44 # 2 A and C

15. Study Guide, p. 45 # 3

16. Study Guide, p. 45 # 4 A and B

17. Is $(x - 2)$ a factor of $p(x) = x^3 + 4x^2 - 5x - 14$? Consider using the Factor Theorem

18. Is 1 a root of $p(x) = x^3 + 10x^2 - 10x - 17$?