UNIT 4 WORKSHEET 3
THE RATIONAL ZERO TEST/DESCARTE'S RULE OF SIGNS

Using the rational zero test, list all <u>possible</u> rational zeros of the following functions.

A) $f_{(x)} = 2x^4 - 6x^2 + 5x - 15$

B) $f_{(x)} = 3x^5 - 6x^4 + 2x^2 - 6x + 12$

C) $f_{(x)} = 8x^3 - 2x + 24$

D) $f_{(x)} = 10x^3 - 15x^2 - 16x + 12$

E) $f_{(x)} = -6x^3 + 5x^2 - 2x + 18$

F) $f_{(x)} = 4x^4 - 16x^3 + 12x - 30$

G) $f_{(x)} = 4x^4 + 3x^3 - 2x^2 + 5x - 12$

H) $f_{(x)} = x^5 - 6x^4 + 12x^2 - 8x + 36$

Descarte's Rule of Signs

Using Descarte's Rule of Signs, state the possible number of positive zeros for each of the following functions.

A) $f_{(x)} = 3x^4 - 6x^3 + 2x^2 - x + 2$

B) $f_{(x)} = -x^5 + 2x^4 - 3x^3 - 7x + 2$

C) $f_{(x)} = 3x^6 - 2x^5 + 7x^4 + 5x^3 - x^2 + 2x - 1$

D) $f_{(x)} = -6x^4 - 5x^2 - 8$

E) $f_{(x)} = -5x^5 + 6x^4 - 3x^2 + x - 15$

F) $f_{(x)} = \frac{1}{2}x^6 - 3x^5 + 7x^3 - 5x^2 + x$

G) $f_{(x)} = x^5 - 3x^4 + 2x^3 + 4x^2 + 5x - 12$

H) $f_{(x)} = \frac{2}{3}x^4 - x^3 + 5x^2 - 3x + 2$

Using Descarte's Rule of Signs, state the possible number of negative zeros for each of the following functions.

A) $f_{(x)} = 3x^4 - 6x^3 + 2x^2 - x + 2$

B) $f_{(x)} = -x^5 + 2x^4 - 3x^3 - 7x + 2$

C) $f_{(x)} = 3x^6 - 2x^5 + 7x^4 + 5x^3 - x^2 + 2x - 1$

D) $f_{(x)} = -6x^4 - 5x^2 - 8$

E) $f_{(x)} = -5x^5 + 6x^4 - 3x^2 + x - 15$

F) $f_{(x)} = \frac{1}{2}x^6 - 3x^5 + 7x^3 - 5x^2 + x$

G) $f_{(x)} = x^5 - 3x^4 + 2x^3 + 4x^2 + 5x - 12$

H) $f_{(x)} = \frac{2}{3}x^4 - x^3 + 5x^2 - 3x + 2$