

AS3: Polynomials

ARHS A2/T

1. *From our friend Vi Hart.* What is the probability of hitting a rational number if you throw a dart at a number line?
2. For the following function: $f(x) = x^4 + 4x^3 + x^2 - 6x - 1$
 - (a) fill in the table of values, plot points, then graph the function
 - (b) identify zeros by circling consecutive x -values on the table
 - (c) identify relative max & mins by circling y -values on the table
 - (d) describe the end behavior.

x	y
-4	39
-3	-1
-2	-1
-1	
0	
1	
2	
3	

3. Factor by grouping: $3a^2 - 2ax - 3a + 2x$.
4. Factor by using a cube or square rule, then solve: $x^5 - 1296x$.
5. Factor first by grouping, then by using a square or cube rule or both:

$$x^5 + 4x^4 + 4x^3 + x^2y^3 + 4xy^3 + 4y^3$$