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| 1. Find all roots of the polynomial f(x) = *x3 + x2 – 2 = 0* and determine the multiplicity of each. Justify your zeros using factoring and/or synthetic division.
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| 1. Find all real zeros of the polynomial f(x) = x4 + 8x3 + 7x2 and determine the multiplicity of each. Justify your zeros using factoring and/or synthetic division.
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| 1. Using a graphing utility, graph f(x) = x5 – 16x4 + 64x3 and approximate the zeros and their multiplicity. Justify your zeros using factoring and/or synthetic division.
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| 1. Write the simplest polynomial (in factored form) with the given zeros and end behavior

**Zeros:** 4 multiplicity 2, -2 multiplicity 1**End Behavior:**   |
| 1. Write the simplest polynomial (in standard form) with the given zeros and end behavior

**Zeros:** -2, 5, , **End Behavior:**   |
| 1. Describe the end behavior of each polynomial function:
2. f(x) = -2x4 + 2x3 + 3x2+ 4
3. f(x) = -2x5 + 2x3 + 5
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| 1. If x = is a root of 49x3 – 126x2 + 60x – 8 = 0, use synthetic division to factor the polynomial completely and list all real solutions of the equation.
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| 1. Write a polynomial function ***(in factored and standard form)*** given the following graphs.
2. B)

Image result for polynomial functions and their graphs Image result for polynomial functions and their graphs |
| 1. List all possible rational roots using the Rational Root Theorem of the following polynomial.

P(x) = - 10x3 + x2 – 22x – 40  |
| 1. f(x) = 2x3 – 4x2 – 2x + 4

*relative maximum(s):\_\_\_\_\_\_\_\_\_\_\_\_\_**relative minimum(s):\_\_\_\_\_\_\_\_\_\_\_\_\_* | 1. f(x) = -4x3 -7x2 +8

*Domain:\_\_\_\_\_\_\_\_\_\_\_\_\_**Range:\_\_\_\_\_\_\_\_\_\_\_\_\_**Even or Odd Function?\_\_\_\_\_\_\_\_\_\_\_\_\_\_* |
| 1.

*Intervals of Increase:\_\_\_\_\_\_\_\_\_\_\_\_\_**Intervals of Decrease:\_\_\_\_\_\_\_\_\_\_\_\_\_* | 1. In July 2005, professional skateboarder jumped over the Great Wall of China. His path can be modeled by the relation h(d) = -0.05d2 + 1.15d, where h is the height above the Great Wall and d is the horizontal distance from the take – off ramp, both in meters. What was Danny’s maximum height above the Great Wall?
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