# Lessons 4.1 – 4.3 Review Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_

**Decide if the function is a polynomial function or not. If so, write it in standard form then state the degree, type and leading coefficient.**

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| --- | --- |
| 1. f(x) = 2x – 5x2 – 8x4 + 1 – 4.5x3polynomial function? \_\_\_\_\_\_\_\_\_\_\_if yes standard form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_degree \_\_\_\_\_\_\_\_\_type \_\_\_\_\_\_\_\_\_\_\_leading coefficient \_\_\_\_\_\_\_\_\_\_
 | 1. f(x) = $3x^{3}-\frac{1}{x}-x^{4}+6$polynomial function? \_\_\_\_\_\_\_\_\_\_\_if yes standard form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_degree \_\_\_\_\_\_\_\_\_type \_\_\_\_\_\_\_\_\_\_\_leading coefficient \_\_\_\_\_\_\_\_\_\_
 |

**Describe the left and right behavior of the polynomial functions.**

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| 1. f(x) = -3x3 + 6x2 – 7x + 2\_\_\_\_\_\_\_\_\_\_ on right, \_\_\_\_\_\_\_\_\_\_ on leftas x→-∞ f(x) →\_\_\_\_\_; as x →+∞ f(x)→\_\_\_\_\_\_
 | 1. f(x) = – 3 – 2x2 + 5x4 + 4x \_\_\_\_\_\_\_\_\_\_ on right, \_\_\_\_\_\_\_\_\_\_ on leftas x→-∞ f(x) →\_\_\_\_\_; as x →+∞ f(x)→\_\_\_\_\_\_
 |

**Find the sum or difference.**

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| 1. (4x2 – 6x + 12) + (-x2 + 3x + 8)
 | 1. (6x2 – 12x + 48) – (-x2 + 21x – 30)
 |

**Find the product**.

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| 1. (2x – 1)2
 | 1. 2x2(x3 – 7x2 + 3x – 5)
 |
| 1. (2x – 3)(x + 5)(5x – 4)
 | 1. (3y + 8)(3y – 8)
 |

**Divide**.

|  |  |
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| 1. (x4 + 2x3 + 5x2 + 3x) ÷ (x2 - x)
 | 1. (x3 – 5x + 6) ÷ (x – 3)
 |

**Evaluate the function for the specified value of x**.

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| 1. f(x) = -x3 + 4x2 – 17x – 6; x = 2
 | 1. f(x) = -x4 + x2 + 4; x = -1
 |