

Name: _____ Hour: _____ Date: _____

Polynomials Unit Test 1 Review Guide

Test Date: Wednesday, March 6, 2019

DO ALL WORK ON A SEPARATE SHEET OF PAPER

Find the product of the following polynomials. Write the product in standard form, classify the polynomial by degree/number of terms and describe the end behavior ($y =$, $a +/ -$, n odd/even)

$$1) (x-3)^2(x-1)$$

$$2) -x^2(x+2)^2$$

$$3) (-2x^3 + 3x - 1)(x^2 + 5)$$

$$4) x^2(x^4 - 16)$$

Factor the following polynomials. *HINT – Sometimes you only need to factor out a GCF and sometimes you need to factor completely.*

5) $10x^3 - 3x$

$$6) 3x^2y - 9xy^4$$

$$7) 2x^2y + 4x^4y + 6x^6y$$

8) $3x^4 - 18x^3 + 24x^2$

9) $x^3 - 9x$

10) $12w^3 - 64w^2 + 80$

Determine the zeros of each polynomial. If there are any multiples, list them with their multiplicity. (c) describe the end behavior ($y = a \pm \infty$, n odd/even), and (d) graph the polynomial.

11) $y = -(2x + 6)(x - 2)(x + 6)(x - 4)$

$$12) y = -x(x - 2)(x + 5)$$

$$13) y = (x - 3)^2(x + 1)^3$$

$$15) y = x^2(x+1)(x-2)^3$$

16) $y = x^4 - 8x^3 + 16x^2$

17) $y = x^3 - 6x^2 - 16x$