

### Math 3 Review 3A

Show all work/thinking

name: \_\_\_\_\_

date: \_\_\_\_\_ per: \_\_\_\_\_

1. Describe the *end behavior* of the function using infinity notation.

$$h(x) = 4x^6 + 5x^5 + x^2 - x + 2$$

2. What does this function's *end behavior* tell you about its degree and leading coefficient?



3. Find the difference.

$$(8x^3 + 3x^2 + 2x + 6) - (2x^3 + 7x^2 + 5x - 1)$$

4. Find the product.

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

5. Find the product.

$$(x - 1)(2x^2 + 3x - 8)$$

7. Find the product of the binomials

$$(x+2)(x-4)(3x+2)$$

8. Expand  $(3x - 5)^5$  using Pascals triangle

9. Multiply:  $(2x+7)(2x-7)$

10. Find the coefficient for  $x^3$  for  $(3x-2)^5$

11. Divide using *long division*.

$$(5x^2 + 3x - 3) \div (x - 5)$$

12. Use *synthetic division* to divide

$$(2x^3 - 5x^2 + 6) \div (x - 2)$$

13. Use *synthetic division* to evaluate the function

for  $x = -2$        $g(x) = 2x^3 + 6x^2 + 3x - 5$

14.. Factor completely :  $x^3 + 3x^2 - 18x$

15. Factor completely  $x^3 + 3x^2 - 9x - 27$

16. Factor completely  $x^3 + 64$

17. Factor completely  $64x^3 - 1$

18. Factor completely  $5x^4 - 19x^3 - 4x^2$

19. Factor completely  $6x^3 - 7x^2 - 3x$

20. Solve the equation by factoring

$$14x^2 - 19x - 3 = 0$$

