2017-18

Algebra 2
WS: 4.2, 4.3 Review

A WALKIETALKIE

Name Key
Date 12/15 **Block** 3A

Puzzletime 4.2

In 1 – 13, find each sum, difference, or product.

A 1. $(10x^2 + 5) - (6x^2 - x + 4)$

$4x^2 + x + 1$

W 2. $(x^5 + 3x^4 - x + 7) + (3x^5 - 8x^4 - x^3 + 12)$

$4x^5 - 5x^4 - x^3 - x + 19$

A 3. $(-3x^3 + 8x^2 - 4) - (-2x^3 - x^2)$

$-x^3 + 9x^2 - 4$

L 4. $-x^2(4x^3 - 2x^2 + 5x - 7)$

$-4x^5 + 2x^4 - 5x^3 + 7x^2$

L 5. $(4x^3 - 2) - (3x^2 - 2)$

$4x^3 - 3x^2$

I 6. $(x - 4)(x + 3)$

$x^2 - x - 12$

C 7. $(5x^2 - x + 2)(-4x + 1)$

$-20x^3 + 5x^2$
$+ 4x^2 - x$
$- 8x + 2$

$-20x^3 + 9x^2 - 9x + 2$

T 8. $(2 - x)(10x^2 - 7x + 9)$

$20x^2 - 14x + 18$
$-10x^3 + 7x^2 - 9x$

$-10x^3 + 27x^2 - 23x + 18$

A 9. $(-2x^2 - 5x + 1)(x^2 + 3x - 2)$

$-2x^4 - 6x^3 + 4x^2$
$-5x^3 - 15x^2 + 10x$
$+ x^2 + 3x - 2$

$-2x^4 - 11x^3 - 10x^2 + 13x - 2$

L 10. $(8x^3 - 2x^2 + 6x - 18) + (4x^3 - x^2 - 5x + 7)$

$12x^3 - 3x^2 + x - 11$

L 11. $(15x - 8) - (20x + 8)$

$-5x - 16$

I 12. $(x - 2)(x + 4)(x - 10)$

$(x^2 + 2x - 8)(x - 10)$

$x^3 - 10x^2 + 2x^2 - 20x - 8x + 80$

$x^3 - 8x^2 - 28x + 80$

C 13. $(2x - 1)(3 - x)(4 + 2x)$

$(2x - 1)(12 + 2x - 2x^2)$

$24x + 4x^2 - 4x^3$
$-12 - 2x + 2x^2$

$-12 + 22x + 6x^2 - 4x^3$

$-4x^3 + 6x^2 + 22x - 12$

In 14 - 17, divide using polynomial long division.

14. $(x^2 + x - 10) \div (x - 2)$

$x + 3 - \frac{4}{x-2}$

$x-2 \;|\; x^2 + x - 10$

$-x^2 + 2x$

$3x - 10$

$-3x + 6$

-4

15. $(x^3 + x^2 + x + 4) \div (x^2 + 2)$

$x + 1 + \frac{-x+2}{x^2+2}$

$x^2+2 \;|\; x^3 + x^2 + x + 4$

$-x^2 + -2x$

$x^2 - x + 4$

$-x^2 + -2$

$-x + 2$

16. $(8x^3 + 2x^2) \div (x^2 - 1)$

$8x + 2 + \frac{8x+2}{x^2-1}$

$x^2-1 \;|\; 8x^3 + 2x^2$

$-8x^3 + 8x$

$2x^2 + 8x$

$-2x^2 + 2$

17. $(4x^4 - 36x^2 - 30x - 12) \div (x^2 - 3x)$

$4x^2 + 12x + \frac{-30x-12}{x^2-3x}$

$x^2-3x \;|\; 4x^4 - 36x^2 - 30x - 12$

$-4x^4 + 12x^3$

$12x^3 - 36x^2$

$-12x^3 + 36x^2$

$-30x - 12$

In 18 - 21, divide using synthetic division.

18. $(x^2 + 3x - 1) \div (x + 1)$ $x + 2 - \frac{3}{x+1}$

$-1 \;|\; 1 \quad 3 \quad -1$

$\quad\quad -1 \quad -2$

$1 \quad 2 \;|\; -3$

19. $(5x^2 - 2x + 8) \div (x - 4)$

$4 \;|\; 5 \quad -2 \quad 8$

$\quad\quad 20 \quad 72$

$5 \quad 18 \;|\; 80$

$5x + 18 + \frac{80}{x-4}$

20. $(x^3 - 2x^2 + x - 6) \div (x + 3)$ $x^2 - 5x + 16 - \frac{54}{x+3}$

$-3 \;|\; 1 \quad -2 \quad 1 \quad -6$

$\quad\quad -3 \quad 15 \quad -48$

$1 \quad -5 \quad 16 \;|\; -54$

21. $(x^2 + 16) \div (x - 4)$

$4 \;|\; 1 \quad 0 \quad 16$

$\quad\quad 4 \quad 16$

$1 \quad 4 \;|\; 32$

$x + 4 + \frac{32}{x-4}$

In 22 - 25, use synthetic division to evaluate the function for the indicated value of x.

22. $f(x) = x^3 + x^2 - 4x + 3;\ x = -1$

$-1 \;|\; 1 \quad 1 \quad -4 \quad 3$

$\quad\quad -1 \quad 0 \quad 4$

$1 \quad 0 \quad -4 \;|\; 7$

$f(-1) = 7$

23. $f(x) = -x^3 - 6x^2 + 6;\ x = -2$

$-2 \;|\; -1 \quad -6 \quad 0 \quad 6$

$\quad\quad 2 \quad 8 \quad -16$

$-1 \quad -4 \quad 8 \;|\; -10$

$f(-2) = -10$

24. $f(x) = x^4 + 5x^2 - 8x + 1;\ x = 4$ $f(4) = 305$

$4 \;|\; 1 \quad 0 \quad 5 \quad -8 \quad 1$

$\quad\quad 4 \quad 16 \quad 84 \quad 304$

$1 \quad 4 \quad 21 \quad 76 \;|\; 305$

25. $f(x) = -x^4 - x^2 - 5;\ x = 3$ $f(3) = -95$

$3 \;|\; -1 \quad 0 \quad -1 \quad 0 \quad -5$

$\quad\quad -3 \quad -9 \quad -30 \quad -90$

$-1 \quad -3 \quad -10 \quad -30 \;|\; -95$