Name: _____ Date: _____

Practice with Naming, Evaluating, and Combining Polynomials

Name the following polynomials by degree and number of terms.

1. $4x+5$ — linear binomial
2. $3x^2+4x-8$ — quadratic trinomial
3. $-3x^2+7x^4+2x-1$ — quartic polynomial

Adding and Subtracting Polynomials

4. $(4x^2-6x)+(3x^2+4x-8)$

$7x^2-2x-8$

5. $(4x^2-6x)-(3x^2+4x-8)$

$x^2-10x+8$

6. $(3x-6)-(3x+6)=3x-6-3x-6$

-12

7. $(x^2-3x+2)+(5x^3-4x^2+1)$

$5x^3-3x^3-3x+3$

Multiplying Polynomials

8. $-2x(x^2+3x-7)$

$-2x^3-6x^2+14x$

9. $(3x+7)(5x-6)$

$16x^2+17x-42$

10. $(3x-6)(3x+6)$

$9x^2+18x-18x-36$

$9x^2-36$

11. $(x-3)(5x^3-7x+1)$

$5x^4-15x^3-7x^2+22x-3$

Combining Functions Practice

Given the functions $f(x)=4x^2-2x+5$ and $g(x)=x^2+7x-8$ and $h(x)=x+5$

1. Find $f(x)+g(x)$

$4x^2-2x+5+x^2+7x-8$

$5x^2+5x-3$

2. Find $f(x)-h(x)$

$4x^2-3x$

3. Find $g(x)-4f(x)$

$x^2+7x-8-4(4x^2-2x+5)$

$x^2+7x-8-16x^2+8x-20$

$-15x^2+15x-28$

4. Find $h(x)\cdot g(x)$

$x^3+12x^2+27x-40$

5. Find $f(-2)+g(3)$

$f(-2)=4(-2)^2-2(-2)+5 = 25$

$g(3)=(3)^2+7(3)-8 = 22$

$25+22=47$

6. Find $g(-2)-f(3)$

-53

Mixed Practice

7. $(8a^5+10a^3)-(13a^5-7a^3)$

A. $21a^5+3a^3$ B. $-5a^5+3a^3$ C. $12a^8$ (D.) $-5a^5+17a^3$

8. $(2x^2+4)(3x-1)$

A. $2x^2+3x+3$ B. $4x^2+12x-4$ (C.) $6x^3-2x^2+12x-4$ D. $6x^3-4$

Find and explain the mistake. Then solve the problem correctly.

Original Problem	Explanation of Mistake	Rework
$(2x^3-3x^2+5x-1)-(3x^3-3x^2-2x+4)$ $-x^3-6x^2+3x+3$	They only distributed the negative to the 1st term ($3x^3$) but not the rest.	$2x^3-3x^2+5x-1-3x^3+3x^2+2x-4$ $-x^3+7x-5$
$(2x^3-2x^2+5x-1)+(8x^2-3x+4)$ $10x^3-5x^2+9x-1$	didn't add like terms.	$2x^3+6x^2+2x+3$

Review

Select three of the ordered pairs below that could be added to the set so that *f* remains a function.

x	f(x)
-5	3
0	6
3	-2
4	0

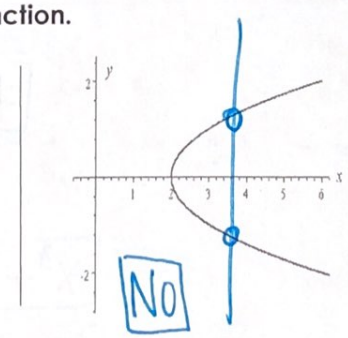
(A.) (-3, -2) B. (4,0) C. (0,-1)

(D.) (1,6) (E.) (2,3) F. (-5, 9)

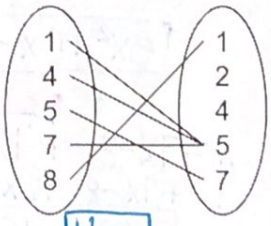
Decide whether each relation is a function.

{ (-5, -2), (5, 0), (9, -3), (8, 0), (-3, -8) }

Yes



No



Yes

Solve.

$-20 = -4(2x + 1)$

$\frac{-20}{-4} = \frac{-8x}{-4} - \frac{4}{-4}$

$5 = 2x + 1$

$-1 \quad -1$

$4 = 2x$

$\frac{4}{2} = \frac{2x}{2}$

$x = 2$

$2x + 3y = 6$ **(y)**

$3y = -2x + 6$

$\frac{3y}{3} = \frac{-2x}{3} + \frac{6}{3}$

$y = -\frac{2}{3}x + 2$

$C = \frac{d+f}{2}$ **(f)**

$2C = d + f$

$-d \quad -d$

$f = 2C - d$