Pg. 557, #7, 11, 13, 15, 17, 21, 25, 31

Homework: Bookwork

NAME Key

Rewriting Polynomials: Write the polynomial so that the exponents decrease from the left to right. Identify the degree and leading coefficient of the polynomial:

7. $5z + 2z^3 - z^2 + 3z^4$

$3z^4 + 2z^3 - z^2 + 5z$

Degree: 4

leading coef: 3

Identify and Classifying Polynomials: Tell whether the expression is a polynomial. If it is a polynomial, find its degree and classify it by the number of its terms. Otherwise, tell why it is not a polynomial:

11. -4^x No!

variable in the exponent

13. 3x-5 Yes!

Degree: linear

Terms: Binomial

15. $6 - n^2 + 5n^3$ Yes!

Degree: Cubic

Terms: trinomial

Adding and Subtracting Polynomials: Find the sum or difference:

17. $(5a^2 - 3) + (8a^2 - 1)$

$13a^2 - 4$

21. $(6c^2 + 3c + 9) - (3c - 5)$

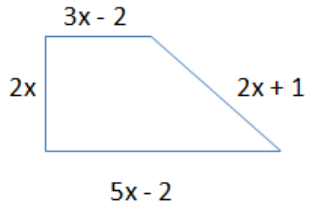
$6c^2 + 14$

25. $(4d - 6d^3 + 3d^2) - (9d^3 + 7d - 2)$

$-15d^3 + 3d^2 - 3d + 2$

Geometry: Write a polynomial that represents the perimeter of the figure:

31.



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

$= 12x - 3$

40. School Enrollment: During the period 1985-2012, the projected enrollment *B* (in thousands of students) in public schools and the projected enrollment *R* (in thousands of students) in private schools can be modeled by:

$$B = -18.53t^2 + 975.8t + 48{,}140 \text{ and } \mathrm{R} = 80.8\mathrm{t} + 8049$$

where t is the number of years since 1985. Write an equation that models the total school enrollment (in thousands of students) as a function of the number of years since 1985. What percent of all students is expected to be enrolled in public schools in 2012?

$T = -18.53t^2 + 1056.6t + 56{,}189$, about 86%

9.2 Video Intro! *Multiplying Polynomials*

Let's Try together!

1. $2x(x^2 + 3x)$

$2x^3 + 6x^2$

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

$3x^5 + 12x^4 + 24x^3 + 15x^2$

You Practice!

2. $4x(x^2 + 3x)$

$4x^3 + 12x^2$

4. $2x^3(4x^2 + 10x + 3)$

$8x^5 + 20x^4 + 6x^3$

Now what do we do?

5. $(x + 5)(2x + 7)$

$2x^2 + 7x + 10x + 35$

$2x^2 + 17x + 35$

6. $(x + 8)(3x + 10)$

$3x^2 + 10x + 24x + 80$

$3x^2 + 34x + 80$

Think about it for a second, how do you think we would multiply the following binomial and trinomial?

7. $(x - 5)(3x^2 + 8x - 9)$

$3x^3 + 8x^2 - 9x$

$-15x^2 - 40x + 45$

$3x^3 - 7x^2 - 49x + 45$

(You Try!)

8. $(x + 4)(7x^2 + 4x + 9)$

$7x^3 + 4x^2 + 9x$

$+ 28x^2 + 16x + 36$

$= 7x^3 + 32x^2 + 25x + 36$