

Detailed Targets:

9 I can use previous skills learned as they apply to Chapter 9 topics.

9.1A I can rewrite a polynomial in decreasing order.

Ex 1a: Write the polynomial in standard form (decreasing order): $5 + 2x^2 - x + 4x^3$

9.1B I can identify and classify polynomials.

Ex 1b: Identify the coefficients and classify the polynomial: $2x^2 - 3x + 8$:

9.1C I can add and subtract polynomials.

Ex 1c: Find the sum of the polynomials: $(3 - x^2 + 2x) + (3x^2 - 4 + x)$

9.1D I can use the concepts as presented in word problems.

Ex 1d: During the period 1990 - 2002, the average costs D (in dollars) for a new domestic car and the average costs I (in dollars) for a new imported car can be modeled by $D = 442.14t + 14,433$ and $I = -137.63t^2 + 2705.2t + 15,111$, where t is the number of years since 1990. Find the difference in average costs(in dollars) for a new imported car and a new domestic car in 2002.

9.2A I can multiply polynomials.

Ex 2a: Find the product of the polynomials $3x(2x^2 - x + 3)$

9.2B I can multiply binomials using FOIL.

Ex 2b: Find the product of the binomials $(2x - 3)(x + 4)$:

9.2C I can use the concepts as presented in word problems.

Ex 2c: You are designing a frame to surround a rectangular picture. The width of the frame around the picture is the same on every side (width of frame is x , width of picture is 22in, length of picture is 20 in).

- a. *Write a polynomial that represents the total area of the picture and the frame.*
- b. *Find the combined area of the picture and the frame when the width of the frame is 4 inches.*

9.3A I can use the square of a binomial pattern.

Ex 3a: Simplify $(2x-3)^2$

9.3B I can use the sum and difference pattern.

Ex 3b: Simplify $(x+2)(x-2)$

9.3C I can use the special products with mental math.

Ex 3c: Simplify $(x+3)^2$

9.3D I can use the concepts as presented in word problems.

Ex 3d: The color of the dark patches of a border collie's coat is determined by a combination of two genes. An offspring inherits one patch color gene from each parent. Each parent has two color genes and the offspring has an equal chance of inheriting either one. The gene B is for black and the gene r is for red patches. Any gene combination with a B results in a black patch. Suppose each parent has the same gene combination Br . The Punnett square shows the possible gene outcomes of the offspring and the resulting patch color.

	B	r
B	BB black	Br black
r	Br black	rr red

- a) *What percent of the possible gene combinations of the offspring result in black patches.*
- b) *Show how you could use a polynomial to model*

the possible gene combinations of the offspring.

9.4A I can use the zero-product property.

Ex 4a: Find the solutions of $(x-5)(2x+1) = 0$

9.4B I can find and factor the greatest common monomial factor.

Ex 4b: Factor $2a^3 + 10a^2 - 20a$

9.4C I can solve an equation by factoring GCFs.

Ex 4c: Factor and solve: $3x^2 + 12x = 0$

9.4D I can use the concepts as presented in word problems.

Ex 4d: A soccer ball is kicked upward from the ground with an initial velocity of 3.6 meters per second. After how many seconds does it land?

9.5A I can factor trinomials of the form $x^2 + bx + c$.

Ex 5a: Factor $x^2 - 14x + 48$

9.5B I can solve a polynomial equation when the leading coefficient is positive one.

Ex 5b: Solve $x^2 + 3x - 54 = 0$

9.5C I can find the zeroes of a polynomial function when the leading coefficient is positive one.

Ex 5c: Find the zeroes of $2x^2 = 10x - 28$

9.5D I can use the concepts as presented in word problems.

Ex 5d: A square quilt has a border that is 1 foot wide on each side. The quilt has an area of 25 square feet. What is the side length of the quilt without the border?

9.6A I can factor trinomials of the form $ax^2 + bx + c$.

Ex 6a: Factor $2x^2 + 5x - 3$

9.6B I can solve a polynomial equation when the leading coefficient is not positive one.

Ex 6b: Solve $3x^2 - 5x - 2 = 0$

9.6C I can find the zeroes of a polynomial function when the leading coefficient is not positive one.

Ex 6c: Find the zeroes $4x^2 + 4x - 3 = 0$

9.6D I can use the concepts as presented in word problems.

Ex 6d: An athlete throws a discus from an initial height of 6 feet and with an initial velocity of 46 feet per second. Use the equation $h = -16t^2 + vt + s$.

a. *Write an equation that gives the height(in feet) of the discus as a function of the time (in seconds) since it left the athlete's hand.*

b. *After how many seconds does the discus hit the ground?*

9.7A I can factor the difference of two squares.

Ex 7a: Factor $4x^2 - 9$

9.7B I can factor perfect square trinomials.

Ex 7b: Factor $x^2 - 8x + 16$

9.7C I can solve a patterned polynomial equation.

Ex 7c: Solve $4x^2 + 4x + 1 = 0$

9.7D I can use the concepts as presented in word problems.

Ex 7d: A window washer drops a wet sponge from a height of 64 feet. After how many seconds does the sponge land on the ground? Use the equation $h = -16t^2 + vt + s$.

9.8A I can factor out a common binomial.

Ex 8a: Factor $3x(x - 2) + 2(x - 2)$

9.8B I can factor by grouping.

Ex 8b: Factor by grouping $x^3 + 2x^2 + 3x + 6$

9.8C I can factor polynomials completely.

Ex 8c: Factor completely $4x^3 + 6x^2 + 2x$

9.8D I can solve polynomial equations by factoring completely.

Ex 8d: Solve $x^3 + 5x^2 = x + 5$

9.8E I can use the concepts as presented in word problems.

Ex 8e: A gift bag is shaped like a rectangular prism and has a volume of 1152 cubic inches. The dimensions are width of $2w + 4$, length of w , and height of $18 - w$. The height is greater than the width. What are the dimensions of the gift bag?
