



IXL Skill Alignment

Algebra 2 alignment for Pearson Mathematics (Savvas):
Common Core Edition



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Chapter 1

Expressions, Equations, and Inequalities

Textbook section

IXL skills

1.1: Patterns and Expressions

1.2: Properties of Real Numbers

Classify numbers

1. Sort rational and irrational numbers AFH
2. Classify rational and irrational numbers D6J

Simplify expressions

3. Simplify variable expressions using properties PVC

1.3: Algebraic Expressions

Sort factors

1. Sort factors of single-variable expressions K6Q
2. Sort factors of multi-variable expressions 75X

Evaluate expressions

3. Evaluate variable expressions involving integers T9J
4. Evaluate variable expressions involving rational numbers JDV

1.4: Solving Equations

One variable

1. Solve equations: complete the solution N83
2. Solve linear equations SNN
3. Solve linear equations: word problems 2BG

Multiple variables

4. Solve multi-variable equations LZD

1.5: Solving Inequalities

Write inequalities

1. Write inequalities from graphs NKA
2. Write a linear inequality: word problems LLV

Linear inequalities

3. Graph a linear inequality in one variable RK5
4. Solve linear inequalities 98Z
5. Graph solutions to linear inequalities 2H4



Compound inequalities

6. Solve compound inequalities GXA

7. Graph solutions to compound inequalities LHX

1.6: Absolute Value Equations and Inequalities

Equations

1. Solve absolute value equations 2JZ

2. Graph solutions to absolute value equations 39B

Inequalities

3. Solve absolute value inequalities UKU

4. Graph solutions to absolute value inequalities G85

Chapter 2

Functions, Equations, and Graphs

Textbook section	IXL skills
2.1: Relations and Functions	Key features <ol style="list-style-type: none">1. Domain and range 78A2. Identify functions LBJ Find values <ol style="list-style-type: none">3. Evaluate functions PS24. Find values using function graphs FS85. Complete a table for a function graph W5Z
2.2: Direct Variation	<ol style="list-style-type: none">1. Write and solve direct variation equations 69A
2.3: Linear Functions and Slope-Intercept Form	<ol style="list-style-type: none">1. Find the slope of a linear function W672. Write the equation of a linear function PBE3. Graph a linear function LSG
2.4: More About Linear Equations	Point-slope form <ol style="list-style-type: none">1. Point-slope form: graph an equation F8H2. Point-slope form: write an equation PPE3. Point-slope form: write an equation from a graph LBX Standard form <ol style="list-style-type: none">4. Write equations in standard form ESP5. Standard form: graph an equation U6U Parallel and perpendicular lines <ol style="list-style-type: none">6. Slopes of parallel and perpendicular lines 6K27. Equations of parallel and perpendicular lines VEB
2.5: Using Linear Models	<ol style="list-style-type: none">1. Interpret a scatter plot 8BS2. Scatter plots: line of best fit Y2S

2.6: Families of Functions**General transformations**

1. Function transformation rules R7X
2. Transformations of functions RSN
3. Describe function transformations KT8

Types of transformations

4. Translations of functions F6J
5. Reflections of functions PHV
6. Dilations of functions NNY

2.7: Absolute Value Functions and Graphs

1. Graph an absolute value function 23W
2. Transformations of absolute value functions FYJ

2.8: Two Variable Inequalities

1. Graph a two-variable linear inequality RWU
 2. Graph solutions to two-variable absolute value inequalities QYX
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Chapter 3

Linear Systems

Textbook section	IXL skills
3.1: Solving Systems Using Tables and Graphs	<ol style="list-style-type: none"> 1. Is (x, y) a solution to the system of equations? NJP 2. Solve a system of equations by graphing M69 3. Solve a system of equations by graphing: word problems T86 4. Classify a system of equations A66
3.2: Solving Systems Algebraically	<p>Substitution</p> <ol style="list-style-type: none"> 1. Solve a system of equations using substitution BW5 2. Solve a system of equations using substitution: word problems DKW <p>Elimination</p> <ol style="list-style-type: none"> 3. Solve a system of equations using elimination 2CN 4. Solve a system of equations using elimination: word problems ARY <p>Any method</p> <ol style="list-style-type: none"> 5. Solve a system of equations using any method FT6 6. Solve a system of equations using any method: word problems ELG
3.3: Systems of Inequalities	<ol style="list-style-type: none"> 1. Is (x, y) a solution to the system of inequalities? RFY 2. Solve systems of linear inequalities by graphing U5D 3. Solve systems of linear and absolute value inequalities by graphing 47Y
3.4: Linear Programming	<ol style="list-style-type: none"> 1. Find the vertices of a solution set FRG 2. Linear programming AY7

**3.5: Systems with Three Variables**

1. Solve a system of equations in three variables using elimination 9S5
 2. Determine the number of solutions to a system of equations in three variables XAX
 3. Solve a system of equations in three variables using substitution X8H
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3.6: Solving Systems Using Matrices

1. Solve a system of equations using augmented matrices RCS
 2. Solve a system of equations using augmented matrices: word problems QX5
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Chapter 4

Quadratic Functions and Equations

Textbook section	IXL skills
4.1: Quadratic Functions and Transformations	<ol style="list-style-type: none"> 1. Characteristics of quadratic functions: graphs WMS 2. Transformations of quadratic functions KQL
4.2: Standard Form of a Quadratic Equation	<ol style="list-style-type: none"> 1. Characteristics of quadratic functions: equations L8C 2. Graph a quadratic function S9G 3. Match quadratic functions and graphs QCE
4.3: Modeling with Quadratic Functions	
4.4: Factoring Quadratic Expressions	<ol style="list-style-type: none"> 1. Factor quadratics UB5 2. Factor using a quadratic pattern QKF 3. Factor by grouping HVT
4.5: Quadratic Equations	<ol style="list-style-type: none"> 1. Solve a quadratic equation using the zero product property TRU 2. Solve a quadratic equation by factoring CJC
4.6: Completing the Square	<ol style="list-style-type: none"> 1. Solve a quadratic equation using square roots FG7 2. Complete the square 9MW 3. Solve a quadratic equation by completing the square NPH
4.7: The Quadratic Formula	<ol style="list-style-type: none"> 1. Solve a quadratic equation using the quadratic formula YQH 2. Using the discriminant QHK
4.8: Complex Numbers	<p>Introduction to complex numbers</p> <ol style="list-style-type: none"> 1. Introduction to complex numbers 5VV <p>Operations with complex numbers</p> <ol style="list-style-type: none"> 2. Add and subtract complex numbers JVF 3. Multiply complex numbers VZ8 4. Divide complex numbers MBM



5. Add, subtract, multiply, and divide complex numbers CEN
6. Complex conjugates 7U5

Absolute value

7. Absolute values of complex numbers UJS

4.9: Quadratic Systems

1. Solve a system of linear and quadratic equations: parabolas HVZ
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Chapter 5

Polynomials and Polynomial Functions

Textbook section	IXL skills
5.1: Polynomial Functions	1. Polynomial vocabulary <small>DYB</small> 2. Match polynomials and graphs <small>XJU</small>
5.2: Polynomials, Linear Factors, and Zeros	1. Find the roots of factored polynomials <small>PVM</small> 2. Write a polynomial from its roots <small>BTU</small>
5.3: Solving Polynomial Equations	1. Solve polynomial equations <small>ZCH</small> 2. Factor polynomials <small>A2W</small>
5.4: Dividing Polynomials	1. Divide polynomials using long division <small>YN5</small> 2. Divide polynomials using synthetic division <small>D6D</small>
5.5: Theorems About Roots of Polynomial Equations	1. Rational root theorem <small>FCX</small> 2. Conjugate root theorems <small>EYD</small> 3. Descartes' Rule of Signs <small>ZFB</small>
5.6: The Fundamental Theorem of Algebra	1. Fundamental Theorem of Algebra <small>YS8</small>
5.7: The Binomial Theorem	1. Binomial Theorem I <small>CWS</small> 2. Pascal's triangle <small>G7Y</small> 3. Pascal's triangle and the Binomial Theorem <small>A7M</small>
5.8: Polynomial Models in the Real World	
5.9: Transforming Polynomial Functions	

Chapter 6

Radical Functions and Rational Exponents

Textbook section	IXL skills
6.1: Roots and Radical Expressions	<p>Roots</p> <ol style="list-style-type: none"> 1. Roots of integers EUH 2. Roots of rational numbers HNE 3. Find roots using a calculator SD5 4. Nth roots U42 <p>Radical expressions</p> <ol style="list-style-type: none"> 5. Simplify radical expressions with variables I LQX 6. Simplify radical expressions with variables II QGZ
6.2: Multiplying and Dividing Radical Expressions	<ol style="list-style-type: none"> 1. Multiply radical expressions PUM 2. Divide radical expressions CCU
6.3: Binomial Radical Expressions	<ol style="list-style-type: none"> 1. Simplify radical expressions using the distributive property QAX 2. Simplify radical expressions using conjugates FX7 3. Add and subtract radical expressions L46
6.4: Rational Exponents	<p>Operations</p> <ol style="list-style-type: none"> 1. Multiplication with rational exponents LMC 2. Division with rational exponents AN5 3. Power rule V2J <p>Simplify expressions</p> <ol style="list-style-type: none"> 4. Simplify expressions involving rational exponents I 2VX 5. Simplify expressions involving rational exponents II U96 6. Evaluate rational exponents KJX
6.5: Solving Square Root and Other Radical Equations	<ol style="list-style-type: none"> 1. Solve radical equations EHE

6.6: Function Operations**Function operations**

1. Add and subtract functions QQD
2. Multiply functions 49K
3. Divide functions 9PH

Composition of functions

4. Composition of linear functions: find a value MFV
5. Composition of linear functions: find an equation RSP
6. Composition of linear and quadratic functions: find a value P9T
7. Composition of linear and quadratic functions: find an equation EKJ

6.7: Inverse Relations and Functions

1. Identify inverse functions 9KT
2. Find values of inverse functions from tables YLX
3. Find values of inverse functions from graphs Z5C
4. Find inverse functions and relations ZRQ

6.8: Graphing Radical Functions

1. Domain and range of radical functions HR9

Chapter 7

Exponential and Logarithmic Functions

Textbook section	IXL skills
7.1: Exploring Exponential Models	1. Exponential growth and decay: word problems TYQ
7.2: Properties of Exponential Functions	1. Compound interest: word problems YJW 2. Continuously compounded interest: word problems 5GU 3. Evaluate exponential functions LWE 4. Match exponential functions and graphs PCX
7.3: Logarithmic Functions as Inverses	
7.4: Properties of Logarithms	<p>Properties of logarithms</p> 1. Identify properties of logarithms N59 2. Product property of logarithms CW9 3. Quotient property of logarithms ZNT 4. Power property of logarithms 7T3 5. Properties of logarithms: mixed review 5LL
	<p>Evaluate logarithms</p> 6. Evaluate logarithms using properties RNH 7. Evaluate logarithms GBR
	<p>Convert between forms</p> 8. Change of base formula J2R 9. Convert between exponential and logarithmic form: rational bases TPA
	<p>Domain and range</p> 10. Domain and range of exponential and logarithmic functions GLL
7.5: Exponential and Logarithmic Equations	<p>Solve exponential equations</p> 1. Solve exponential equations using common logarithms 9F2

Solve logarithmic equations

2. Solve logarithmic equations I BXU
3. Solve logarithmic equations II RLX

7.6: Natural Logarithms

1. Convert between natural exponential and logarithmic form 5KM
 2. Evaluate natural logarithms XG9
 3. Solve exponential equations using natural logarithms KVL
 4. Convert between exponential and logarithmic form: all bases 8RK
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Chapter 8

Rational Functions

Textbook section	IXL skills
8.1: Inverse Variation	<ol style="list-style-type: none">1. Write and solve inverse variation equations PNY2. Write joint and combined variation equations I ZFJ3. Write joint and combined variation equations II W2Z4. Classify variation C9D
8.2: The Reciprocal Function Family	
8.3: Rational Functions and Their Graphs	<ol style="list-style-type: none">1. Rational functions: asymptotes and excluded values 7JJ
8.4: Rational Expressions	<ol style="list-style-type: none">1. Simplify rational expressions 37N2. Multiply and divide rational expressions MG2
8.5: Adding and Subtracting Rational Expressions	<ol style="list-style-type: none">1. Add and subtract rational expressions FEX2. Simplify complex fractions HYL
8.6: Solving Rational Equations	<ol style="list-style-type: none">1. Solve rational equations CHP

Chapter 9

Sequences and Series

Textbook section	IXL skills
9.1: Mathematical Patterns	<ol style="list-style-type: none">1. Classify formulas and sequences 2UZ2. Evaluate explicit formulas for sequences NV53. Evaluate recursive formulas for sequences QB94. Write a formula for a recursive sequence ZAH
9.2: Arithmetic Sequences	<ol style="list-style-type: none">1. Find terms of an arithmetic sequence C8R2. Write a formula for an arithmetic sequence H82
9.3: Geometric Sequences	<ol style="list-style-type: none">1. Find terms of a geometric sequence BHV2. Write a formula for a geometric sequence Q5V3. Sequences: mixed review 2MX
9.4: Arithmetic Series	<ol style="list-style-type: none">1. Find the sum of an arithmetic series W6A2. Introduction to sigma notation DHQ
9.5: Geometric Series	<ol style="list-style-type: none">1. Find the sum of a finite geometric series 9KQ2. Identify arithmetic and geometric series HS93. Convergent and divergent geometric series DY84. Find the value of an infinite geometric series ZVH

Chapter 10

Quadratic Relations and Conic Sections

Textbook section

IXL skills

10.1: Exploring Conic Sections

10.2: Parabolas

Key features

1. Identify the direction a parabola opens HHX
2. Find the vertex of a parabola 2NE
3. Find the focus or directrix of a parabola TNG
4. Find properties of a parabola from equations in general form B7U

Graphs

5. Graph parabolas YNJ
6. Write equations of parabolas in vertex form from graphs C6U
7. Write equations of parabolas in vertex form using properties EPR

10.3: Circles

Key features

1. Find the center of a circle U6E
2. Find properties of circles from equations in general form 2PA
3. Find the radius or diameter of a circle 5Q2

Write equations

4. Write equations of circles in standard form from graphs ZLA
5. Write equations of circles in standard form using properties SHN

Graphs

6. Graph circles 2PL

10.4: Ellipses

Key features

1. Find the center, vertices, or co-vertices of an ellipse Z2U
2. Find the length of the major or minor axes of an ellipse YE2

3. Find the foci of an ellipse 86P
4. Find properties of ellipses from equations in general form 57E

Write equations

5. Write equations of ellipses in standard form from graphs HRR
6. Write equations of ellipses in standard form using properties 6W9

10.5: Hyperbolas**Key features**

1. Find the center of a hyperbola MN7
2. Find the vertices of a hyperbola DCW
3. Find the foci of a hyperbola GNS
4. Find properties of hyperbolas from equations in general form RME

Write equations

5. Find the equations for the asymptotes of a hyperbola 49W
6. Write equations of hyperbolas in standard form from graphs MND
7. Write equations of hyperbolas in standard form using properties 47M

Also consider

- Find the length of the transverse or conjugate axes of a hyperbola BYZ

10.6: Translating Conic Sections

Chapter 11

Probability and Statistics

Textbook section	IXL skills
11.1: Permutations and Combinations	<ol style="list-style-type: none"> Counting principle ZUV Combinations and permutations UAB
11.2: Probability	<ol style="list-style-type: none"> Introduction to probability 9QC Calculate probabilities of events QRS Find probabilities using combinations and permutations SVX
11.3: Probability of Multiple Events	<ol style="list-style-type: none"> Identify independent events RTZ Probability of independent and dependent events X5U Find probabilities using the addition rule B9L
11.4: Conditional Probability	<ol style="list-style-type: none"> Find conditional probabilities 2M4 Find conditional probabilities using two-way frequency tables HGC
11.5: Probability Models	
11.6: Analyzing Data	<p>Central tendency</p> <ol style="list-style-type: none"> Mean, median, mode, and range MHB <p>Outliers</p> <ol style="list-style-type: none"> Identify an outlier TMV Identify an outlier and describe the effect of removing it NRJ <p>Box plots</p> <ol style="list-style-type: none"> Box plots YE9
11.7: Standard Deviation	<ol style="list-style-type: none"> Variance and standard deviation V5H
11.8: Samples and Surveys	<ol style="list-style-type: none"> Identify biased samples CH7

11.9: Binomial Distributions

1. Find probabilities using the binomial distribution ZGX
 2. Binomial Theorem II NEU
-

11.1: Normal Distributions

1. Find probabilities using the normal distribution I QA9
 2. Find probabilities using the normal distribution II 6M9
 3. Find values of normal variables 9B3
-

Chapter 12

Matrices

Textbook section	IXL skills
12.1: Adding and Subtracting Matrices	<ol style="list-style-type: none"> 1. Add and subtract matrices QFX 2. Solve matrix equations QU8
12.2: Matrix Multiplication	<ol style="list-style-type: none"> 1. Multiply a matrix by a scalar 72T 2. Multiply two matrices T64 3. Matrix operation rules XCW 4. Add and subtract scalar multiples of matrices Xfv
12.3: Determinants and Inverses	<ol style="list-style-type: none"> 1. Determinant of a matrix KLQ 2. Is a matrix invertible? M8R 3. Inverse of a matrix ZAA 4. Identify inverse matrices VB6
12.4: Inverse Matrices and Systems	<ol style="list-style-type: none"> 1. Solve matrix equations using inverses Y6B
12.5: Geometric Transformations	<ol style="list-style-type: none"> 1. Identify transformation matrices 7P5 2. Transformation matrices: write the vertex matrix CGD 3. Transformation matrices: graph the image UHM
12.6: Vectors	<p>Parts of a vector</p> <ol style="list-style-type: none"> 1. Find the magnitude of a vector XV9 2. Find the component form of a vector XLQ 3. Find the direction angle of a vector RTR <p>Operations</p> <ol style="list-style-type: none"> 4. Add vectors KLY 5. Subtract vectors EXK 6. Multiply a vector by a scalar WNC

Chapter 13

Periodic Functions and Trigonometry

Textbook section	IXL skills
13.1: Exploring Periodic Data	
13.2: Angles and the Unit Circle	<ol style="list-style-type: none"> 1. Find trigonometric ratios using the unit circle ZF7 2. Sin, cos, and tan of special angles 6H8 3. Coterminal angles 7CV 4. Graphs of angles PSG 5. Quadrants ANN
13.3: Radian Measure	<ol style="list-style-type: none"> 1. Convert between radians and degrees EDC 2. Radians and arc length UA5
13.4: The Sine Function	<ol style="list-style-type: none"> 1. Find properties of sine functions 2EK 2. Graph sine functions 9NS 3. Write equations of sine functions from graphs FGW
13.5: The Cosine Function	<ol style="list-style-type: none"> 1. Find properties of cosine functions F8Y 2. Graph cosine functions KXG 3. Write equations of cosine functions from graphs 4G8
13.6: The Tangent Function	
13.7: Translating Sine and Cosine Functions	<ol style="list-style-type: none"> 1. Graph translations of sine functions LCN 2. Graph translations of cosine functions M5K 3. Graph translations of sine and cosine functions 9D7
13.8: Reciprocal Trigonometric Functions	<ol style="list-style-type: none"> 1. Trigonometric ratios: csc, sec, and cot P82 2. Csc, sec, and cot of special angles PAE

Chapter 14

Trigonometric Identities and Equations

Textbook section	IXL skills
14.1: Trigonometric Identities	<ol style="list-style-type: none"> 1. Trigonometric identities I XJJ 2. Trigonometric identities II F8F
14.2: Solving Trigonometric Equations Using Inverses	<ol style="list-style-type: none"> 1. Inverses of sin, cos, and tan JVB 2. Solve trigonometric equations I CQB 3. Solve trigonometric equations II SNX
14.3: Right Triangles and Trigonometric Ratios	<ol style="list-style-type: none"> 1. Trigonometric ratios: sin, cos, and tan PQJ 2. Trigonometric ratios: find a side length MHJ 3. Trigonometric ratios: find an angle measure 84G 4. Solve a right triangle DPP
14.4: Area and the Law of Sines	<ol style="list-style-type: none"> 1. Law of Sines BSY 2. Area of a triangle: Law of Sines 5NP 3. Area of a triangle: sine formula LNQ
14.5: The Law of Cosines	<ol style="list-style-type: none"> 1. Law of Cosines ZQB 2. Solve a triangle YPP
14.6: Angle Identities	
14.7: Double-Angle and Half-Angle Identities	