IXL Skill Alignment

Course 3 alignment for McGraw-Hill Integrated Math

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Chapter 0

Preparing for Integrated Math III

Textbook section	IXL skills	
Lesson 0-1: Representing Functions	**A1-Q.1**	Relations: convert between tables, graphs, mappings, and lists of points >>
	A1-Q.2	Domain and range of relations >>
Lesson 0-2: FOIL	**A1-Z.8**	Multiply two binomials >>
Lesson 0-3: Factoring Polynomials	**A2-I.3**	Factor quadratics >>
Lesson 0-4: Counting Techniques	**A1-JJ.6**	Permutations >>
	A1-JJ.7	Counting principle >>
	A1-JJ.8	Permutation and combination notation >>
Lesson 0-5: Adding Probabilities	**A1-JJ.1**	Theoretical probability >>
	A1-JJ.2	Experimental probability >>
	A1-JJ.3	Compound events: find the number of outcomes >>
Lesson 0-6: Multiplying Probabilities	**A2-CC.9**	Find conditional probabilities >>
	A1-JJ.4	Identify independent and dependent events >>
	A1-JJ.5	Probability of independent and dependent events >>
Lesson 0-7: Congruent and Similar Figures	**G-J.1**	Congruence statements and corresponding parts >>
	G-P.2	Similarity statements >>
	G-P.3	Identify similar figures >>
Lesson 0-8: The Pythagorean Theorem	**G-Q.1**	Pythagorean Theorem >>
	G-Q.2	Converse of the Pythagorean theorem >>
Lesson 0-9: Measures of Center, Spread, and Position	**A1-N.5**	Interpret box-and-whisker plots >>
	A1-KK.2	Mean, median, mode, and range >>
	A1-KK.7	Variance and standard deviation >>

Chapter 1

Equations in Inequalities

Textbook section	IXL skills	
Lesson 1-1: Expressions and Formulas	**A2-A.1**	Evaluate variable expressions involving integers >>
	A2-A.2	Evaluate variable expressions involving rational numbers >>
Lesson 1-2: Properties of Real Numbers	**A1-A.8**	Sort rational and irrational numbers >>
	A1-A.9	Classify rational and irrational numbers >>
	A1-A.10	Classify numbers >>
	A1-H.1	Properties of addition and multiplication >>
	A1-H.2	Distributive property >>
	A1-H.3	Simplify variable expressions using properties >>
Lesson 1-3: Solving Equations	**A2-B.1**	Solve linear equations >>
	A2-B.2	Solve linear equations: word problems >>
	A2-B.3	Solve equations: complete the solution >>
	A1-H.4	Properties of equality >>
Lesson 1-4: Solving Absolute Value Equations	**A2-B.4**	Solve absolute value equations >>
Lesson 1-5: Solving Inequalities	**A2-C.1**	Graph a linear inequality in one variable >>
	A2-C.2	Write inequalities from graphs >>
	A2-C.3	Write a linear inequality: word problems >>
	A2-C.4	Solve linear inequalities >>
	A2-C.5	Graph solutions to linear inequalities >>
Lesson 1-6: Solving Compound and Absolute Value Inequalities	**A2-C.6**	Solve absolute value inequalities >>
	A2-C.7	Graph solutions to absolute value inequalities >>

A1-K.12	Graph compound inequalities >>
A1-K.13	Write compound inequalities from graphs >>
A1-K.14	Solve compound inequalities >>
A1-K.15	Graph solutions to compound inequalities >>

Chapter 2

Linear Relations and Functions

Textbook section	IXL skills	
Lesson 2-1: Relations and Functions	**A2-D.1**	Domain and range >>
	A2-D.2	Identify functions >>
	A2-D.3	Evaluate functions >>
Lesson 2-2: Linear Relations and Functions	**A1-S.1**	Identify linear functions >>
	A1-S.12	Write linear functions to solve word problems >>
	A1-S.15	Write equations in standard form >>
	A1-S.16	Standard form: find x- and y-intercepts >>
	A1-S.17	Standard form: graph an equation >>
Lesson 2-3: Rate of Change and Slope	**A1-S.2**	Find the slope of a graph >>
	A1-S.3	Find the slope from two points >>
Lesson 2-4: Writing Linear Equations	**A1-S.7**	Slope-intercept form: write an equation from a graph >>
	A1-S.8	Slope-intercept form: write an equation >>
	A1-S.9	Slope-intercept form: write an equation from a table >>
	A1-S.10	Slope-intercept form: write an equation from a word problem >>
	A1-S.21	Point-slope form: write an equation >>
	A1-S.22	Point-slope form: write an equation from a graph >>
	A1-S.24	Write an equation for a parallel or perpendicular line >>
Lesson 2-5: Special Functions	**A1-DD.1**	Complete a function table: absolute value functions >>
	A1-DD.2	Graph an absolute value function >>
	A1-DD.3	Domain and range of absolute value functions: graphs >>
	A1-DD.4	Domain and range of absolute value functions: equations >>

Lesson 2-6: Parent Functions and Transformations	**A2-P.2**	Translations of functions >>
	A2-P.3	Reflections of functions >>
	A2-P.4	Dilations of functions >>
	A2-P.5	Transformations of functions >>
	A2-P.6	Describe function transformations >>
Lesson 2-7: Graphing Linear and Absolute Value Inequalities	**A2-C.8**	Graph a two-variable linear inequality >>
	A2-C.9	Graph solutions to two-variable absolute value inequalities >>

Chapter 3

Systems of Equations and Inequalities

Textbook section	IXL skills	
Lesson 3-1: Solving Systems of Equations	**A2-E.2**	Solve a system of equations by graphing >>
	A2-E.3	Solve a system of equations by graphing: word problems >>
	A2-E.4	Find the number of solutions to a system of equations >>
	A2-E.5	Classify a system of equations >>
	A2-E.6	Solve a system of equations using substitution >>
	A2-E.7	Solve a system of equations using substitution: word problems >>
	A2-E.8	Solve a system of equations using elimination >>
	A2-E.9	Solve a system of equations using elimination: word problems >>
Lesson 3-2: Solving Systems of Inequalities by Graphing	**A2-F.2**	Solve systems of linear inequalities by graphing >>
	A2-F.3	Solve systems of linear and absolute value inequalities by graphing >>
	A2-F.4	Find the vertices of a solution set >>
Lesson 3-3: Optimization with Linear Programming	**A2-F.5**	Linear programming >>
Lesson 3-4: Systems of Equations in Three Variables	**A2-E.12**	Solve a system of equations in three variables using substitution >>
	A2-E.13	Solve a system of equations in three variables using elimination >>
	A2-E.14	Determine the number of solutions to a system of equations in three variables >>
Lesson 3-5: Solving Systems of Equations Using Cramer's Rule	**A2-G.10**	Determinant of a matrix >>
Lesson 3-6: Solving Systems of Equations using Inverse Matrices	**A2-G.12**	Inverse of a matrix >>
	A2-G.13	Identify inverse matrices >>

A2-G.14	Solve matrix equations using inverses >>
A2-G.18	Solve a system of equations using augmented matrices >>
A2-G.19	Solve a system of equations using augmented matrices: word problems >>

Chapter 4

Polynomials and Polynomial Functions

Textbook section	IXL skills	
Lesson 4-1: Operations with Polynomials	**A1-Y.2**	Multiply monomials >>
	A1-Y.3	Divide monomials >>
	A1-Y.4	Multiply and divide monomials >>
	A1-Z.4	Add and subtract polynomials >>
	A1-Z.6	Multiply a polynomial by a monomial >>
	A1-Z.8	Multiply two binomials >>
	A1-Z.10	Multiply polynomials >>
Lesson 4-2: Dividing Polynomials	**A2-K.4**	Divide polynomials using long division >>
	A2-K.5	Divide polynomials using synthetic division >>
Lesson 4-3: Polynomial Functions		
Lesson 4-4: Analyzing Graphs of Polynomial Functions	**A2-K.14**	Match polynomials and graphs >>
Lesson 4-5: Solving Polynomial Equations	**A2-I.4**	Factor using a quadratic pattern >>
	A2-I.5	Factor by grouping >>
	A2-I.6	Factor sums and differences of cubes >>
	A2-I.7	Factor polynomials >>
	A2-K.7	Solve polynomial equations >>
Lesson 4-6: The Remainder and Factor Theorems	**A2-K.6**	Evaluate polynomials using synthetic division >>
Lesson 4-7: Roots and Zeros	**A2-K.8**	Find the roots of factored polynomials >>
	A2-K.9	Write a polynomial from its roots >>
	A2-K.13	Descartes' Rule of Signs >>
	A2-K.15	Fundamental Theorem of Algebra >>
Lesson 4-8: Rational Zero Theorem	**A2-K.10**	Rational root theorem >>

Chapter 5

Inverses and Radical Functions and Relations

Textbook section	IXL skills	
Lesson 5-1: Operations on Functions	**A2-O.1**	Add and subtract functions >>
	A2-O.2	Multiply functions >>
	A2-O.3	Divide functions >>
	A2-O.4	Composition of linear functions: find a value >>
	A2-O.5	Composition of linear functions: find an equation >>
Lesson 5-2: Inverse Functions and Relations	**A2-O.8**	Identify inverse functions >>
	A2-O.11	Find inverse functions and relations >>
Lesson 5-3: Square Root Functions and Inequalities	**A2-L.12**	Domain and range of radical functions >>
Lesson 5-4: nth Roots	**A2-L.4**	Simplify radical expressions with variables I >>
	A2-L.5	Simplify radical expressions with variables II >>
	A2-L.6	Nth roots >>
Lesson 5-5: Operations with Radical Expressions	**A2-L.7**	Multiply radical expressions >>
	A2-L.8	Divide radical expressions >>
	A2-L.9	Add and subtract radical expressions >>
	A2-L.10	Simplify radical expressions using the distributive property >>
	A2-L.11	Simplify radical expressions using conjugates >>
Lesson 5-6: Rational Exponents	**A2-M.1**	Evaluate rational exponents >>
	A2-M.2	Multiplication with rational exponents >>
	A2-M.3	Division with rational exponents >>
	A2-M.4	Power rule >>
	A2-M.5	Simplify expressions involving rational exponents I >>

	A2-M.6	Simplify expressions involving rational exponents II >>
Lesson 5-7: Solving Radical Equations and Inequalities	**A2-L.13**	Solve radical equations >>

Chapter 6

Exponential and Logarithmic Functions and Relations

Textbook section	IXL skills	
Lesson 6-1: Logarithms and Logarithmic Functions	**A2-R.1**	Convert between exponential and logarithmic form: rational bases >>
	A2-R.4	Evaluate logarithms >>
Lesson 6-2: Solving Logarithmic Equations and Inequalities	**A2-S.7**	Solve logarithmic equations I >>
	A2-S.8	Solve logarithmic equations II >>
Lesson 6-3: Properties of Logarithms	**A2-R.8**	Product property of logarithms >>
	A2-R.9	Quotient property of logarithms >>
	A2-R.10	Power property of logarithms >>
	A2-R.11	Properties of logarithms: mixed review >>
Lesson 6-4: Common Logarithms	**A2-R.6**	Change of base formula >>
	A2-S.5	Solve exponential equations using common logarithms >>
Lesson 6-5: Base e and Natural Logarithms	**A2-R.2**	Convert between natural exponential and logarithmic form >>
	A2-R.3	Convert between exponential and logarithmic form: all bases >>
	A2-R.5	Evaluate natural logarithms >>
	A2-S.6	Solve exponential equations using natural logarithms >>
	A2-S.13	Compound interest: word problems >>
	A2-S.14	Continuously compounded interest: word problems >>
Lesson 6-6: Using Exponential and Logarithmic Functions	**A2-S.12**	Exponential growth and decay: word problems >>

Chapter 7

Rational Functions and Relations

Textbook section	IXL skills	
Lesson 7-1: Multiplying and Dividing Rational Expressions	**A2-N.4**	Simplify rational expressions >>
	A2-N.5	Multiply and divide rational expressions >>
Lesson 7-2: Adding and Subtracting Rational Expressions	**A2-N.6**	Add and subtract rational expressions >>
Lesson 7-3: Graphing Reciprocal Functions		
Lesson 7-4: Graphing Rational Functions	**A2-N.1**	Rational functions: asymptotes and excluded values >>
Lesson 7-5: Solving Rational Equations and Inequalities	**A2-N.7**	Solve rational equations >>

Chapter 8

Conic Sections

Textbook section	IXL skills	
Lesson 8-1: Midpoint and Distance Formulas	**G-B.7**	Midpoint formula - find the midpoint >>
	G-B.9	Distance formula >>
Lesson 8-2: Parabolas	**A2-T.1**	Identify the direction a parabola opens >>
	A2-T.2	Find the vertex of a parabola >>
	A2-T.3	Find the focus or directrix of a parabola >>
	A2-T.4	Find the axis of symmetry of a parabola >>
	A2-T.5	Write equations of parabolas in vertex form from graphs >>
	A2-T.6	Write equations of parabolas in vertex form using properties >>
	A2-T.8	Find properties of a parabola from equations in general form >>
	A2-T.9	Graph parabolas >>
Lesson 8-3: Circles	**A2-U.1**	Find the center of a circle >>
	A2-U.2	Find the radius or diameter of a circle >>
	A2-U.3	Write equations of circles in standard form from graphs >>
	A2-U.4	Write equations of circles in standard form using properties >>
	A2-U.6	Find properties of circles from equations in general form >>
	A2-U.7	Graph circles >>
Lesson 8-4: Ellipses	**A2-V.1**	Find the center, vertices, or co-vertices of an ellipse >>
	A2-V.2	Find the length of the major or minor axes of an ellipse >>
	A2-V.3	Find the foci of an ellipse >>
	A2-V.4	Write equations of ellipses in standard form from graphs >>

	A2-V.5	Write equations of ellipses in standard form using properties >>
	A2-V.7	Find properties of ellipses from equations in general form >>
Lesson 8-5: Hyperbolas	**A2-W.1**	Find the center of a hyperbola >>
	A2-W.2	Find the vertices of a hyperbola >>
	A2-W.4	Find the equations for the asymptotes of a hyperbola >>
	A2-W.5	Find the foci of a hyperbola >>
	A2-W.6	Write equations of hyperbolas in standard form from graphs >>
	A2-W.7	Write equations of hyperbolas in standard form using properties >>
	A2-W.9	Find properties of hyperbolas from equations in general form >>
Lesson 8-6: Identifying Conic Sections	**A2-T.7**	Convert equations of parabolas from general to vertex form >>
	A2-U.5	Convert equations of circles from general to standard form >>
	A2-V.6	Convert equations of ellipses from general to standard form >>
	A2-W.8	Convert equations of hyperbolas from general to standard form >>
Lesson 8-7: Solving Linear-Nonlinear Systems	**A2-E.15**	Solve a system of linear and quadratic equations >>
	A2-E.16	Solve a non-linear system of equations >>

Chapter 9

Sequences and Series

Textbook section	IXL skills	
Lesson 9-1: Sequences as Functions	**A1-P.1**	Identify arithmetic and geometric sequences >>
	A2-BB.1	Find terms of an arithmetic sequence >>
	A2-BB.2	Find terms of a geometric sequence >>
Lesson 9-2: Arithmetic Sequences and Series	**A2-BB.6**	Write a formula for an arithmetic sequence >>
	A2-BB.11	Introduction to sigma notation >>
	A2-BB.14	Partial sums of arithmetic series >>
Lesson 9-3: Geometric Sequences and Series	**A2-BB.7**	Write a formula for a geometric sequence >>
	A2-BB.10	Identify arithmetic and geometric series >>
	A2-BB.12	Find the sum of a finite arithmetic or geometric series >>
	A2-BB.13	Introduction to partial sums >>
	A2-BB.15	Partial sums of geometric series >>
	A2-BB.16	Partial sums: mixed review >>
Lesson 9-4: The Binomial Theorem	**A2-K.16**	Pascal's triangle >>
	A2-K.17	Pascal's triangle and the Binomial Theorem >>
	A2-K.18	Binomial Theorem I >>
	A2-K.19	Binomial Theorem II >>
Lesson 9-5: Proof by Mathematical Induction		

Chapter 10

Statistics and Probability

Textbook section	IXL skills	
Lesson 10-1: Designing a Study	**A2-EE.1**	Identify biased samples >>
	A2-EE.12	Experiment design >>
Lesson 10-2: Distributions of Data		
Lesson 10-3: Probability Distributions	**A2-DD.1**	Identify discrete and continuous random variables >>
	A2-DD.2	Write a discrete probability distribution >>
	A2-DD.3	Graph a discrete probability distribution >>
	A2-DD.4	Expected values of random variables >>
	A2-DD.6	Standard deviation of random variables >>
	A2-DD.8	Expected values for a game of chance >>
Lesson 10-4: The Binomial Distribution	**A2-DD.10**	Find probabilities using the binomial distribution >>
Lesson 10-5: The Normal Distribution	**A2-DD.11**	Find probabilities using the normal distribution I >>
	A2-DD.12	Find probabilities using the normal distribution II >>
	A2-DD.13	Find z-values >>
Lesson 10-6: Confidence Intervals and Hypothesis Testing	**A2-EE.9**	Find confidence intervals for population means >>
	A2-EE.11	Interpret confidence intervals for population means >>
Lesson 10-7: Simulations	**A2-EE.13**	Analyze the results of an experiment using simulations >>

Chapter 11

Trigonometric Functions

Textbook section	IXL skills	
Lesson 11-1: Trigonometric Functions in Right Triangles	**A2-Y.3**	Trigonometric ratios: sin, cos, and tan >>
	A2-Y.4	Trigonometric ratios: csc, sec, and cot >>
	A2-Y.7	Sin, cos, and tan of special angles >>
	A2-Y.14	Trigonometric ratios: find a side length >>
	A2-Y.15	Trigonometric ratios: find an angle measure >>
	A2-Y.16	Solve a right triangle >>
Lesson 11-2: Angles and Angle Measure	**A2-X.1**	Convert between radians and degrees >>
	A2-X.2	Radians and arc length >>
	A2-X.5	Coterminal angles >>
	A2-X.6	Reference angles >>
Lesson 11-3: Trigonometric Functions of General Angles	**PC-M.7**	Find trigonometric ratios using reference angles >>
	A2-X.3	Graphs of angles >>
	A2-X.4	Quadrants >>
Lesson 11-4: Law of Sines	**A2-Y.17**	Law of Sines >>
	A2-Y.20	Area of a triangle: sine formula >>
	A2-Y.21	Area of a triangle: Law of Sines >>
Lesson 11-5: Law of Cosines	**A2-Y.18**	Law of Cosines >>
	A2-Y.19	Solve a triangle >>
Lesson 11-6: Circular and Periodic Functions	**A2-Y.6**	Find trigonometric ratios using the unit circle >>
Lesson 11-7: Graphing Trigonometric Functions	**A2-Z.1**	Find properties of sine functions >>
	A2-Z.5	Find properties of cosine functions >>

Lesson 11-8: Translations of Trigonometric Graphs	**A2-Z.4**	Graph sine functions >>
	A2-Z.8	Graph cosine functions >>
	A2-Z.9	Graph sine and cosine functions >>
Lesson 11-9: Inverse Trigonometric Functions	**A2-Y.10**	Inverses of sin, cos, and tan >>
	A2-Y.11	Inverses of csc, sec, and cot >>

Chapter 12

Trigonometric Identities and Equations

Textbook section	IXL skills	
Lesson 12-1: Trigonometric Identities	**A2-AA.1**	Complementary angle identities >>
	A2-AA.3	Trigonometric identities I >>
	A2-AA.4	Trigonometric identities II >>
Lesson 12-2: Verifying Trigonometric Identities		
Lesson 12-3: Sum and Difference of Angles Identities		
Lesson 12-4: Double-Angle and Half-Angle Identities		
Lesson 12-5: Solving Trigonometric Equations	**A2-Y.12**	Solve trigonometric equations I >>
	A2-Y.13	Solve trigonometric equations II >>

Chapter 13

Proportions and Similarity

Textbook section	IXL skills	
Lesson 13-1: Ratios and Proportion	**A1-C.2**	Write an equivalent ratio >>
	A1-C.5	Solve proportions >>
	A1-C.6	Solve proportions: word problems >>
Lesson 13-2: Parallel Lines and Proportional Parts	**G-M.1**	Midsegments of triangles >>
	G-P.10	Triangle Proportionality Theorem >>
Lesson 13-3: Similarity Transformations	**G-P.8**	Similar triangles and similarity transformations >>
Lesson 13-4: Scale Drawings and Models	**G-A.2**	Scale drawings: word problems >>

Chapter 14

Transformations and Symmetry

Textbook section	IXL skills	
Lesson 14-1: Reflections	**G-L.5**	Reflections: graph the image >>
	G-L.6	Reflections: find the coordinates >>
Lesson 14-2: Translations	**G-L.2**	Translations: graph the image >>
	G-L.3	Translations: find the coordinates >>
	G-L.4	Translations: write the rule >>
Lesson 14-3: Rotations	**G-L.7**	Rotate polygons about a point >>
	G-L.8	Rotations: graph the image >>
	G-L.9	Rotations: find the coordinates >>
Lesson 14-4: Transformations and Symmetry	**G-L.10**	Compositions of congruence transformations: graph the image >>
Lesson 14-5: Symmetry	**G-O.1**	Line symmetry >>
	G-O.2	Rotational symmetry >>
	G-O.3	Draw lines of symmetry >>
	G-O.4	Count lines of symmetry >>
Lesson 14-6: Dilations	**G-L.13**	Dilations: graph the image >>
	G-L.14	Dilations: find the coordinates >>
	G-L.15	Dilations: scale factor and classification >>

Chapter 15

Extending Surface Area and Volume

Textbook section	IXL skills	
Lesson 15-1: Representations of Three-Dimensional Figures	**G-H.3**	Nets and drawings of three-dimensional figures >>
	G-H.4	Cross-sections of three-dimensional figures >>
Lesson 15-2: Surface Areas of Prisms and Cylinders	**G-T.2**	Surface area of prisms and cylinders >>
Lesson 15-3: Surface Area of Pyramids and Cones	**G-T.3**	Surface area of pyramids and cones >>
Lesson 15-4: Volumes of Prisms and Cylinders	**G-T.4**	Volume of prisms and cylinders >>
Lesson 15-5: Volumes of Pyramids and Cones	**G-T.5**	Volume of pyramids and cones >>