



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 | <ol style="list-style-type: none"> 1. Relations: convert between tables, graphs, mappings, and lists of points RBG 2. Domain and range of relations 2CG |
| Lesson 0-2: FOIL | <ol style="list-style-type: none"> 1. Multiply two binomials M7Q |
| Lesson 0-3: Factoring Polynomials | <ol style="list-style-type: none"> 1. Factor quadratics UB5 |
| Lesson 0-4: Counting Techniques | <ol style="list-style-type: none"> 1. Counting principle GTX 2. Permutations SFZ 3. Permutation and combination notation 7TT |
| Lesson 0-5: Adding Probabilities | <ol style="list-style-type: none"> 1. Theoretical probability 2MS 2. Experimental probability LQV 3. Outcomes of compound events GKA |
| Lesson 0-6: Multiplying Probabilities | <ol style="list-style-type: none"> 1. Identify independent and dependent events 5A7 2. Probability of independent and dependent events WRJ 3. Find conditional probabilities 2M4 |
| Lesson 0-7: Congruent and Similar Figures | <ol style="list-style-type: none"> 1. Congruence statements and corresponding parts CYL 2. Similarity statements UG8 3. Identify similar figures 85X |
| Lesson 0-8: The Pythagorean Theorem | <ol style="list-style-type: none"> 1. Pythagorean theorem F55 2. Converse of the Pythagorean theorem NCK |
| Lesson 0-9: Measures of Center, Spread, and Position | <ol style="list-style-type: none"> 1. Box plots YE9 2. Mean, median, mode, and range MHB 3. Variance and standard deviation HX5 |

Chapter 1

Equations in Inequalities

| Textbook section | IXL skills |
|---|--|
| Lesson 1-1: Expressions and Formulas | <ol style="list-style-type: none"> Evaluate variable expressions involving integers T9J Evaluate variable expressions involving rational numbers JDV |
| Lesson 1-2: Properties of Real Numbers | <ol style="list-style-type: none"> Sort rational and irrational numbers ALH Classify rational and irrational numbers 3S8 Classify numbers RB8 Properties of addition and multiplication TQS Distributive property BHL Simplify variable expressions using properties HHR |
| Lesson 1-3: Solving Equations | <ol style="list-style-type: none"> Properties of equality H8Q Solve linear equations SNN Solve linear equations: word problems 2BG Solve equations: complete the solution N83 |
| Lesson 1-4: Solving Absolute Value Equations | <ol style="list-style-type: none"> Solve absolute value equations 2JZ |
| Lesson 1-5: Solving Inequalities | <ol style="list-style-type: none"> Graph a linear inequality in one variable RK5 Write inequalities from graphs NKA Write a linear inequality: word problems LLV Solve linear inequalities 98Z Graph solutions to linear inequalities 2H4 |
| Lesson 1-6: Solving Compound and Absolute Value Inequalities | <ol style="list-style-type: none"> Graph compound inequalities BQX Write compound inequalities from graphs 6UV Solve compound inequalities GXA Graph solutions to compound inequalities LHX Solve absolute value inequalities UKU Graph solutions to absolute value inequalities G85 |

Chapter 2

Linear Relations and Functions

| Textbook section | IXL skills |
|---|--|
| Lesson 2-1: Relations and Functions | <ol style="list-style-type: none">1. Domain and range 78A2. Identify functions LBJ3. Evaluate functions PS2 |
| Lesson 2-2: Linear Relations and Functions | <ol style="list-style-type: none">1. Identify linear functions from graphs and equations VMQ2. Write linear functions: word problems 9RQ3. Write equations in standard form ESP4. Standard form: find x- and y-intercepts 8SN5. Standard form: graph an equation U6U |
| Lesson 2-3: Rate of Change and Slope | <ol style="list-style-type: none">1. Find the slope of a graph E7D2. Find the slope from two points MD5 |
| Lesson 2-4: Writing Linear Equations | <ol style="list-style-type: none">1. Slope-intercept form: write an equation from a graph 9GW2. Slope-intercept form: write an equation A423. Slope-intercept form: write an equation from a table SSE4. Slope-intercept form: write an equation from a word problem HWM5. Point-slope form: write an equation PPE6. Point-slope form: write an equation from a graph LBX7. Write an equation for a parallel or perpendicular line 5SH |
| Lesson 2-5: Special Functions | <ol style="list-style-type: none">1. Complete a function table: absolute value functions 2DH2. Graph an absolute value function TD23. Domain and range of absolute value functions: graphs NV74. Domain and range of absolute value functions: equations FCY |

Lesson 2-6: Parent Functions and Transformations

1. Translations of functions F6J
2. Reflections of functions PHV
3. Dilations of functions NNY
4. Transformations of functions RSN
5. Describe function transformations KT8

Lesson 2-7: Graphing Linear and Absolute Value Inequalities

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

Chapter 3

Systems of Equations and Inequalities

| Textbook section | IXL skills |
|---|--|
| Lesson 3-1: Solving Systems of Equations | <ol style="list-style-type: none"> 1. Solve a system of equations by graphing M69 2. Solve a system of equations by graphing: word problems T86 3. Find the number of solutions to a system of equations P5A 4. Classify a system of equations A66 5. Solve a system of equations using substitution BW5 6. Solve a system of equations using substitution: word problems DKW 7. Solve a system of equations using elimination 2CN 8. Solve a system of equations using elimination: word problems ARY |
| Lesson 3-2: Solving Systems of Inequalities by Graphing | <ol style="list-style-type: none"> 1. Solve systems of linear inequalities by graphing U5D 2. Solve systems of linear and absolute value inequalities by graphing 47Y 3. Find the vertices of a solution set FRG |
| Lesson 3-3: Optimization with Linear Programming | <ol style="list-style-type: none"> 1. Linear programming AY7 |
| Lesson 3-4: Systems of Equations in Three Variables | <ol style="list-style-type: none"> 1. Solve a system of equations in three variables using substitution X8H 2. Solve a system of equations in three variables using elimination 9S5 3. Determine the number of solutions to a system of equations in three variables XAX |
| Lesson 3-5: Solving Systems of Equations Using Cramer's Rule | <ol style="list-style-type: none"> 1. Determinant of a matrix KLQ |

Lesson 3-6: Solving Systems of Equations using Inverse Matrices

1. Inverse of a matrix ZAA
 2. Identify inverse matrices VB6
 3. Solve matrix equations using inverses Y6B
 4. Solve a system of equations using augmented matrices RCS
 5. Solve a system of equations using augmented matrices: word problems QX5
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Chapter 4

Polynomials and Polynomial Functions

| Textbook section | IXL skills |
|---|---|
| Lesson 4-1: Operations with Polynomials | <ol style="list-style-type: none"> 1. Multiply monomials 52N 2. Divide monomials B48 3. Multiply and divide monomials 48P 4. Add and subtract polynomials 5EK 5. Multiply a polynomial by a monomial G2G 6. Multiply two binomials M7Q 7. Multiply polynomials 58A |
| Lesson 4-2: Dividing Polynomials | <ol style="list-style-type: none"> 1. Divide polynomials using long division YN5 2. Divide polynomials using synthetic division D6D |
| Lesson 4-3: Polynomial Functions | |
| Lesson 4-4: Analyzing Graphs of Polynomial Functions | <ol style="list-style-type: none"> 1. Match polynomials and graphs XJU |
| Lesson 4-5: Solving Polynomial Equations | <ol style="list-style-type: none"> 1. Factor using a quadratic pattern QKF 2. Factor by grouping HVT 3. Factor sums and differences of cubes NJV 4. Factor polynomials A2W 5. Solve polynomial equations ZCH |
| Lesson 4-6: The Remainder and Factor Theorems | <ol style="list-style-type: none"> 1. Evaluate polynomials using synthetic division CHC |
| Lesson 4-7: Roots and Zeros | <ol style="list-style-type: none"> 1. Find the roots of factored polynomials PVM 2. Write a polynomial from its roots BTU 3. Descartes' Rule of Signs ZFB 4. Fundamental Theorem of Algebra YS8 |
| Lesson 4-8: Rational Zero Theorem | <ol style="list-style-type: none"> 1. Rational root theorem FCX |

Chapter 5

Inverses and Radical Functions and Relations

| Textbook section | IXL skills |
|---|--|
| Lesson 5-1: Operations on Functions | <ol style="list-style-type: none"> 1. Add and subtract functions QQD 2. Multiply functions 49K 3. Divide functions 9PH 4. Composition of linear functions: find a value MFV 5. Composition of linear functions: find an equation RSP |
| Lesson 5-2: Inverse Functions and Relations | <ol style="list-style-type: none"> 1. Identify inverse functions 9KT 2. Find inverse functions and relations ZRQ |
| Lesson 5-3: Square Root Functions and Inequalities | <ol style="list-style-type: none"> 1. Domain and range of radical functions HR9 |
| Lesson 5-4: nth Roots | <ol style="list-style-type: none"> 1. Simplify radical expressions with variables I LQX 2. Simplify radical expressions with variables II QGZ 3. Nth roots U42 |
| Lesson 5-5: Operations with Radical Expressions | <ol style="list-style-type: none"> 1. Multiply radical expressions PUM 2. Divide radical expressions CCU 3. Add and subtract radical expressions L46 4. Simplify radical expressions using the distributive property QAX 5. Simplify radical expressions using conjugates FX7 |
| Lesson 5-6: Rational Exponents | <ol style="list-style-type: none"> 1. Evaluate rational exponents KJX 2. Multiplication with rational exponents LMC 3. Division with rational exponents AN5 4. Power rule V2J 5. Simplify expressions involving rational exponents I 2VX |



6. Simplify expressions involving rational exponents II U96

Lesson 5-7: Solving Radical Equations and Inequalities

1. Solve radical equations EHE

Chapter 6

Exponential and Logarithmic Functions and Relations

| Textbook section | IXL skills |
|---|---|
| Lesson 6-1: Logarithms and Logarithmic Functions | <ol style="list-style-type: none"> 1. Convert between exponential and logarithmic form: rational bases TPA 2. Evaluate logarithms GBR |
| Lesson 6-2: Solving Logarithmic Equations and Inequalities | <ol style="list-style-type: none"> 1. Solve logarithmic equations I BXU 2. Solve logarithmic equations II RLX |
| Lesson 6-3: Properties of Logarithms | <ol style="list-style-type: none"> 1. Product property of logarithms CW9 2. Quotient property of logarithms ZNT 3. Power property of logarithms 7T3 4. Properties of logarithms: mixed review 5LL |
| Lesson 6-4: Common Logarithms | <ol style="list-style-type: none"> 1. Change of base formula J2R 2. Solve exponential equations using common logarithms 9F2 |
| Lesson 6-5: Base e and Natural Logarithms | <ol style="list-style-type: none"> 1. Convert between natural exponential and logarithmic form 5KM 2. Convert between exponential and logarithmic form: all bases 8RK 3. Evaluate natural logarithms XG9 4. Solve exponential equations using natural logarithms KVL 5. Compound interest: word problems YJW 6. Continuously compounded interest: word problems 5GU |
| Lesson 6-6: Using Exponential and Logarithmic Functions | <ol style="list-style-type: none"> 1. Exponential growth and decay: word problems TYQ |

Chapter 7

Rational Functions and Relations

| Textbook section | IXL skills |
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| Lesson 7-1: Multiplying and Dividing Rational Expressions | <ol style="list-style-type: none">1. Simplify rational expressions 37N2. Multiply and divide rational expressions MG2 |
| Lesson 7-2: Adding and Subtracting Rational Expressions | <ol style="list-style-type: none">1. Add and subtract rational expressions FEX |
| Lesson 7-3: Graphing Reciprocal Functions | |
| Lesson 7-4: Graphing Rational Functions | <ol style="list-style-type: none">1. Rational functions: asymptotes and excluded values 7JJ |
| Lesson 7-5: Solving Rational Equations and Inequalities | <ol style="list-style-type: none">1. Solve rational equations CHP |

Chapter 8

Conic Sections

Textbook section

IXL skills

Lesson 8-1: Midpoint and Distance Formulas

1. Midpoint formula: find the midpoint 2YG
2. Distance formula 59F

Lesson 8-2: Parabolas

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 the axis of symmetry of a parabola AAY
5. Write equations of parabolas in vertex form from graphs C6U
6. Write equations of parabolas in vertex form using properties EPR
7. Find properties of a parabola from equations in general form B7U
8. Graph parabolas YNJ

Lesson 8-3: Circles

1. Find the center of a circle U6E
2. Find the radius or diameter of a circle 5Q2
3. Write equations of circles in standard form from graphs ZLA
4. Write equations of circles in standard form using properties SHN
5. Find properties of circles from equations in general form 2PA
6. Graph circles 2PL

Lesson 8-4: Ellipses

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

6. Find properties of ellipses from equations in general form S7E
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Lesson 8-5: Hyperbolas

1. Find the center of a hyperbola MN7
 2. Find the vertices of a hyperbola DCW
 3. Find the equations for the asymptotes of a hyperbola 49W
 4. Find the foci of a hyperbola GNS
 5. Write equations of hyperbolas in standard form from graphs MND
 6. Write equations of hyperbolas in standard form using properties 47M
 7. Find properties of hyperbolas from equations in general form RME
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Lesson 8-6: Identifying Conic Sections

1. Convert equations of parabolas from general to vertex form 39W
 2. Convert equations of circles from general to standard form D2H
 3. Convert equations of ellipses from general to standard form NWQ
 4. Convert equations of hyperbolas from general to standard form PFG
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Lesson 8-7: Solving Linear-Nonlinear Systems

1. Solve a system of linear and quadratic equations: parabolas HVZ
 2. Solve a nonlinear system of equations GCC
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Chapter 9

Sequences and Series

| Textbook section | IXL skills |
|--|---|
| Lesson 9-1: Sequences as Functions | <ol style="list-style-type: none">1. Identify arithmetic and geometric sequences X762. Find terms of an arithmetic sequence C8R3. Find terms of a geometric sequence BHV |
| Lesson 9-2: Arithmetic Sequences and Series | <ol style="list-style-type: none">1. Write a formula for an arithmetic sequence H822. Introduction to sigma notation DHQ3. Partial sums of arithmetic series 7CT |
| Lesson 9-3: Geometric Sequences and Series | <ol style="list-style-type: none">1. Write a formula for a geometric sequence Q5V2. Identify arithmetic and geometric series HS93. Find the sum of an arithmetic series W6A4. Introduction to partial sums AGV5. Partial sums of geometric series 9JU6. Partial sums: mixed review SKG |
| Lesson 9-4: The Binomial Theorem | <ol style="list-style-type: none">1. Pascal's triangle G7Y2. Pascal's triangle and the Binomial Theorem A7M3. Binomial Theorem I CWS4. Binomial Theorem II NEU |
| Lesson 9-5: Proof by Mathematical Induction | |

Chapter 10

Statistics and Probability

| Textbook section | IXL skills |
|---|--|
| Lesson 10-1: Designing a Study | <ol style="list-style-type: none"> 1. Identify biased samples CH7 2. Experiment design BKR |
| Lesson 10-2: Distributions of Data | |
| Lesson 10-3: Probability Distributions | <ol style="list-style-type: none"> 1. Identify discrete and continuous random variables ETC 2. Write a discrete probability distribution RH6 3. Graph a discrete probability distribution 5KH 4. Expected values of random variables 3K9 5. Standard deviation of random variables SSU 6. Expected values for a game of chance F2J |
| Lesson 10-4: The Binomial Distribution | <ol style="list-style-type: none"> 1. Find probabilities using the binomial distribution ZGX |
| Lesson 10-5: The Normal Distribution | <ol style="list-style-type: none"> 1. Find probabilities using the normal distribution I QA9 2. Find probabilities using the normal distribution II 6M9 3. Find z-values PAJ |
| Lesson 10-6: Confidence Intervals and Hypothesis Testing | <ol style="list-style-type: none"> 1. Find confidence intervals for population means JVK 2. Interpret confidence intervals for population means MNM |
| Lesson 10-7: Simulations | <ol style="list-style-type: none"> 1. Analyze the results of an experiment using simulations RLB |

Chapter 11

Trigonometric Functions

| Textbook section | IXL skills |
|--|---|
| Lesson 11-1: Trigonometric Functions in Right Triangles | <ol style="list-style-type: none"> 1. Trigonometric ratios: sin, cos, and tan P QJ 2. Trigonometric ratios: csc, sec, and cot P82 3. Sin, cos, and tan of special angles 6H8 4. Trigonometric ratios: find a side length MHJ 5. Trigonometric ratios: find an angle measure 84G 6. Solve a right triangle DPP |
| Lesson 11-2: Angles and Angle Measure | <ol style="list-style-type: none"> 1. Convert between radians and degrees EDC 2. Radians and arc length UA5 3. Coterminal angles 7CV 4. Reference angles BRP |
| Lesson 11-3: Trigonometric Functions of General Angles | <ol style="list-style-type: none"> 1. Graphs of angles PSG 2. Quadrants ANN 3. Find trigonometric ratios using reference angles 9QB |
| Lesson 11-4: Law of Sines | <ol style="list-style-type: none"> 1. Law of Sines BSY 2. Area of a triangle: sine formula LNQ 3. Area of a triangle: Law of Sines 5NP |
| Lesson 11-5: Law of Cosines | <ol style="list-style-type: none"> 1. Law of Cosines ZQB 2. Solve a triangle YPP |
| Lesson 11-6: Circular and Periodic Functions | <ol style="list-style-type: none"> 1. Find trigonometric ratios using the unit circle ZF7 |
| Lesson 11-7: Graphing Trigonometric Functions | <ol style="list-style-type: none"> 1. Find properties of sine functions 2EK 2. Find properties of cosine functions F8Y |
| Lesson 11-8: Translations of Trigonometric Graphs | <ol style="list-style-type: none"> 1. Graph sine functions 9NS 2. Graph cosine functions KXG 3. Graph sine and cosine functions A7V |



Lesson 11-9: Inverse Trigonometric Functions

1. Inverses of sin, cos, and tan JVB
 2. Inverses of csc, sec, and cot NJD
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Chapter 12

Trigonometric Identities and Equations

Textbook section

IXL skills

Lesson 12-1: Trigonometric Identities

1. Complementary angle identities 89X
2. Trigonometric identities I XJJ
3. Trigonometric identities II F8F

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

1. Solve trigonometric equations I CQB
2. Solve trigonometric equations II SNX

Chapter 13

Proportions and Similarity

| Textbook section | IXL skills |
|---|---|
| Lesson 13-1: Ratios and Proportion | <ol style="list-style-type: none">1. Write an equivalent ratio RW62. Solve proportions 2ZL3. Solve proportions: word problems 8ES |
| Lesson 13-2: Parallel Lines and Proportional Parts | <ol style="list-style-type: none">1. Midsegments of triangles 8GT2. Triangle Proportionality Theorem 6WA |
| Lesson 13-3: Similarity Transformations | <ol style="list-style-type: none">1. Similar triangles and similarity transformations G2Z |
| Lesson 13-4: Scale Drawings and Models | <ol style="list-style-type: none">1. Scale drawings: word problems M7M |

Chapter 14

Transformations and Symmetry

| Textbook section | IXL skills |
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| Lesson 14-1: Reflections | <ol style="list-style-type: none">1. Reflections: graph the image SM92. Reflections: find the coordinates SVY |
| Lesson 14-2: Translations | <ol style="list-style-type: none">1. Translations: graph the image 7AC2. Translations: find the coordinates F8U3. Translations: write the rule 9PR |
| Lesson 14-3: Rotations | <ol style="list-style-type: none">1. Rotate polygons about a point XM72. Rotations: graph the image 6SD3. Rotations: find the coordinates ZX5 |
| Lesson 14-4: Transformations and Symmetry | <ol style="list-style-type: none">1. Sequences of congruence transformations: graph the image WHW |
| Lesson 14-5: Symmetry | <ol style="list-style-type: none">1. Line symmetry WBX2. Rotational symmetry ERP3. Draw lines of symmetry JU74. Count lines of symmetry M7U |
| Lesson 14-6: Dilations | <ol style="list-style-type: none">1. Dilations: graph the image ZRD2. Dilations: find the coordinates 5KZ3. Dilations: scale factor and classification ZDM |

Chapter 15

Extending Surface Area and Volume

| Textbook section | IXL skills |
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| Lesson 15-1: Representations of Three-Dimensional Figures | <ol style="list-style-type: none">1. Nets and drawings of three-dimensional figures <small>PKE</small>2. Cross sections of three-dimensional figures <small>7Z4</small> |
| Lesson 15-2: Surface Areas of Prisms and Cylinders | <ol style="list-style-type: none">1. Surface area of prisms and cylinders <small>SWV</small> |
| Lesson 15-3: Surface Area of Pyramids and Cones | <ol style="list-style-type: none">1. Surface area of pyramids and cones <small>8WX</small> |
| Lesson 15-4: Volumes of Prisms and Cylinders | <ol style="list-style-type: none">1. Volume of prisms and cylinders <small>N5F</small> |
| Lesson 15-5: Volumes of Pyramids and Cones | <ol style="list-style-type: none">1. Volume of pyramids and cones <small>7J3</small> |