



IXL Skill Plan for the PSAT[®]

Math



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Score range less than 400

Algebra

Standard	IXL skills
Variable expressions and equations	<ol style="list-style-type: none"> 1. Write variable expressions D7K 2. Write variable expressions: word problems MEC 3. Write variable equations YVW 4. Write variable equations: word problems TVB 5. Evaluate one-variable expressions V77

Problem Solving and Data

Standard	IXL skills
Word problems	<ol style="list-style-type: none"> 1. Multi-step word problems LHA
Ratios and rates	<ol style="list-style-type: none"> 1. Equivalent fractions MKA 2. Understanding ratios X45 3. Write an equivalent ratio RW6 4. Word problems involving ratios 8AT 5. Unit rates 8FZ 6. Ratios and rates: word problems ZB9 7. Unit prices JHA 8. Convert rates and measurements: customary units TXC 9. Convert rates and measurements: metric units 6W2
Percents	<ol style="list-style-type: none"> 1. What percentage is illustrated? RHG 2. Convert between percents, fractions, and decimals ZAV 3. Compare percents and fractions: word problems 9C8 4. Percents of numbers: word problems BBY 5. Find what percent one number is of another PE7

Graphs

1. Interpret bar graphs V54
2. Interpret line plots YXD
3. Interpret pictographs Y5D
4. Interpret line graphs B66

Additional Topics in Math**Standard****IXL skills****Area and volume**

1. Area of rectangles and squares BE9
2. Area of triangles C8S
3. Area and circumference of circles ZDX
4. Volume of cubes and prisms URT
5. Volume of cubes and rectangular prisms: word problems 8WV

Score range 400–490

Algebra

Standard	IXL skills
Simplify linear expressions	<ol style="list-style-type: none">1. Simplify variable expressions involving like terms and the distributive property ZXX2. Identify equivalent linear expressions 62A
Solve linear equations	<ol style="list-style-type: none">1. Solve one-step linear equations TXJ2. Solve two-step linear equations QAK3. Solve advanced linear equations 28N4. Solve linear equations with variables on both sides 7S75. Solve linear equations: complete the solution EVP6. Solve linear equations: mixed review DN67. Solve one-step and two-step linear equations: word problems UFG8. Write and solve linear equations that represent diagrams GBC
Understand linear functions	<ol style="list-style-type: none">1. Write a two-variable equation 94Q2. Write equations for proportional relationships from tables S693. Write equations for proportional relationships from graphs G7N4. Slope-intercept form: write an equation from a word problem HWM5. Interpret points on the graph of a linear function 9E8
Inequalities	<ol style="list-style-type: none">1. Does (x, y) satisfy the inequality? N9L

Problem Solving and Data

Standard	IXL skills
Proportional relationships	<p>Proportions</p> <ol style="list-style-type: none"> 1. Do the ratios form a proportion? QBJ 2. Solve proportions BNY 3. Identify proportional relationships from graphs 48M <p>Applications</p> <ol style="list-style-type: none"> 4. Do the ratios form a proportion: word problems JHP 5. Scale drawings: word problems 8B7
Percents	<ol style="list-style-type: none"> 1. Solve percent equations 39N 2. Percent word problems BLW 3. Percent of change GRG 4. Percent of change: word problems 59V
Measurement and unit conversions	<ol style="list-style-type: none"> 1. Multi-step problems with unit conversions EHV
Tables and graphs	<ol style="list-style-type: none"> 1. Interpret tables LVG 2. Interpret bar graphs M83 3. Interpret line graphs TGQ 4. Interpret line plots RL8 5. Interpret histograms HVL 6. Interpret circle graphs 5WK

Passport to Advanced Math

Standard	IXL skills
Multiply polynomials	<ol style="list-style-type: none"> 1. Multiply a polynomial by a monomial G2G

Additional Topics in Math

Standard	IXL skills
Area and volume	<ol style="list-style-type: none">1. Area and perimeter: word problems 6MY2. Area of compound figures KHG3. Area between two shapes SB64. Surface area of cubes and rectangular prisms RMG5. Surface area of prisms and cylinders SWV6. Surface area of pyramids and cones 8WX7. Volume of prisms and cylinders N5F8. Volume of pyramids and cones 7J3
Trigonometry	<ol style="list-style-type: none">1. Trigonometric ratios: sin, cos, and tan PQJ

Score range 500–590

Algebra

Standard	IXL skills
Solve linear inequalities	<ol style="list-style-type: none">1. Solve one-step linear inequalities EEX2. Solve two-step linear inequalities NPZ
Understand linear functions	<ol style="list-style-type: none">1. Write a linear function from a table UYY2. Write and solve two-variable linear equations: word problems 9RQ3. Evaluate a linear function: word problems DA6
Graphs of linear equations	<p>Slope-intercept form</p> <ol style="list-style-type: none">1. Slope-intercept form: graph an equation UWB2. Slope-intercept form: write an equation from a graph 9GW <p>Standard form</p> <ol style="list-style-type: none">3. Standard form: graph an equation U6U <p>Graphs and tables</p> <ol style="list-style-type: none">4. Complete a table and graph a linear function JFG5. Compare linear functions: tables, graphs, and equations GD7 <p>Horizontal and vertical lines</p> <ol style="list-style-type: none">6. Graph a horizontal or vertical line BTK
Systems of linear equations	<ol style="list-style-type: none">1. Is (x, y) a solution to the system of equations? LRL2. Solve a system of equations by graphing TSS3. Solve a system of equations using substitution 8P94. Solve a system of equations using elimination A485. Solve a system of equations using any method: word problems GDQ

Problem Solving and Data

Standard	IXL skills
Proportional relationships	<ol style="list-style-type: none"> 1. Find the constant of proportionality from a table ZCK 2. Identify proportional relationships from graphs and equations 45N 3. Graph proportional relationships and find the slope MQD 4. Interpret graphs of proportional relationships Q96 5. Find the constant of variation 9TD
Applications of proportional relationships	<ol style="list-style-type: none"> 1. Solve proportions: word problems 5XV 2. Estimate population size using proportions ZNB 3. Write and solve equations for proportional relationships HPM
Percent and consumer math	<ol style="list-style-type: none"> 1. Percent of change: find the original amount word problems 7UW 2. Percent of a number: tax, discount, and more SKZ 3. Find the percent: tax, discount, and more VQX 4. Multi-step problems with percents HBJ
Measurement and unit conversions	<ol style="list-style-type: none"> 1. Convert between customary and metric systems 7DU 2. Unit prices with unit conversions LT6
Probability	<ol style="list-style-type: none"> 1. Probability of simple events 5ZY 2. Probability of independent and dependent events SAS
Calculate and analyze the shape, center, and spread of data	<ol style="list-style-type: none"> 1. Mean, median, mode, and range MHB
Data analysis and inference	<ol style="list-style-type: none"> 1. Interpret a scatter plot 8BS 2. Outliers in scatter plots EG5 3. Identify biased samples F6N

Passport to Advanced Math

Standard	IXL skills
Solve quadratic equations	<ol style="list-style-type: none"> 1. Solve a quadratic equation using square roots ERF 2. Solve a quadratic equation using the zero product property TNM 3. Solve a quadratic equation by factoring CSS 4. Solve a quadratic equation using the quadratic formula XCF
Evaluate functions	<ol style="list-style-type: none"> 1. Evaluate a function R96 2. Find values using function graphs QCG 3. Complete a function table from a graph HXF 4. Complete a function table from an equation Z73
Polynomials	<p>Add and subtract</p> <ol style="list-style-type: none"> 1. Add and subtract polynomials 5EK 2. Add polynomials to find perimeter 8AS <p>Multiply</p> <ol style="list-style-type: none"> 3. Multiply two binomials M7Q 4. Multiply two binomials: special cases 9JN 5. Multiply polynomials 58A <p>Factor</p> <ol style="list-style-type: none"> 6. Factor quadratics with leading coefficient 1 S9P 7. Factor quadratics with other leading coefficients 7ED 8. Factor quadratics: special cases 56E 9. Factor polynomials TAH
Solve radical equations	<ol style="list-style-type: none"> 1. Solve radical equations I MMG 2. Solve radical equations II ZGH
Solve multi-variable equations	<ol style="list-style-type: none"> 1. Rearrange multi-variable equations WSJ 2. Linear equations: solve for y T5F

Additional Topics in Math

Standard	IXL skills
Congruence and similarity	<ol style="list-style-type: none">1. Transversals of parallel lines: find angle measures WB92. Triangle Angle-Sum Theorem UBU
Complex numbers	<ol style="list-style-type: none">1. Introduction to complex numbers 5VV2. Add and subtract complex numbers JVF

Score range 600–690

Algebra

Standard	IXL skills
Linear equations: number of solutions	<ol style="list-style-type: none"> 1. Find the number of solutions to a linear equation <small>KBP</small> 2. Create linear equations with no solutions or infinitely many solutions <small>PUK</small> 3. Find the number of solutions to a system of equations by graphing <small>HJW</small>
Systems of linear inequalities	<ol style="list-style-type: none"> 1. Solve systems of linear inequalities by graphing <small>SGH</small>

Problem Solving and Data

Standard	IXL skills
Linear, quadratic, and exponential functions	<ol style="list-style-type: none"> 1. Domain and range of exponential functions: graphs <small>ANC</small> 2. Characteristics of quadratic functions: graphs <small>HW8</small> 3. Linear functions over unit intervals <small>L5P</small> 4. Exponential functions over unit intervals <small>S7D</small>
Probability	<ol style="list-style-type: none"> 1. Find conditional probabilities using two-way frequency tables <small>HGC</small>
Data analysis and inference	<ol style="list-style-type: none"> 1. Write equations for lines of best fit <small>Y2S</small>

Passport to Advanced Math

Standard	IXL skills
Quadratic functions	<ol style="list-style-type: none"> 1. Solve a system of linear and quadratic equations <small>4U9</small> 2. Match quadratic functions and graphs <small>AU8</small> 3. Solve a quadratic equation by completing the square <small>XCL</small>

Exponential functions

1. Match exponential functions and graphs II 72J
2. Identify linear, quadratic, and exponential functions from graphs DHB
3. Identify linear, quadratic, and exponential functions from tables SP5

Understand functions and their transformations

1. Interpret functions using everyday language U98
2. Translations of functions F6J
3. Reflections of functions PHV
4. Dilations of functions NNY
5. Transformations of functions RSN
6. Describe function transformations KT8

Polynomials

1. Factor by grouping HAA
2. Find the roots of factored polynomials PVM
3. Write a polynomial from its roots BTU

Operations with rational expressions

1. Simplify rational expressions Q7U

Radicals and rational exponents

1. Simplify radical expressions ZFF
2. Simplify radical expressions with variables 82V
3. Simplify radical expressions involving fractions VRZ
4. Multiply radical expressions HMX
5. Add and subtract radical expressions DLV
6. Simplify radical expressions using the distributive property 28V
7. Simplify radical expressions using conjugates TYC
8. Simplify radical expressions: mixed review YZC
9. Evaluate rational exponents KJX

Additional Topics in Math

Standard

Congruence and similarity

IXL skills

Congruent figures

1. Congruency in isosceles and equilateral triangles HPR

Similar two-dimensional figures

2. Similarity ratios BT7
3. Identify similar figures 85X
4. Side lengths and angle measures in similar figures E2K
5. Perimeters of similar figures 9T8
6. Areas of similar figures 2BA

Similar three-dimensional figures

7. Surface area and volume of similar solids N9X
8. Surface area and volume: changes in scale T9H

Circles in the coordinate plane**Properties of circles**

1. Find the center of a circle CJA
2. Find the radius or diameter of a circle VGW

Write equations of circles

3. Write equations of circles in standard form from graphs 8HJ
4. Write equations of circles in standard form using properties EXA

Pythagorean Theorem and special right triangles

1. Pythagorean theorem F55
2. Converse of the Pythagorean theorem NCK
3. Triangle Inequality Theorem BW7
4. Special right triangles NUF

Trigonometry

1. Trigonometric ratios in similar right triangles XFA
 2. Sin, cos, and tan of special angles: degrees C5R
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Score range 700+

Algebra

Standard	IXL skills
Linear equations and inequalities	<ol style="list-style-type: none"> 1. Write two-variable inequalities: word problems ZAY 2. Find the number of solutions to a system of equations ACN

Passport to Advanced Math

Standard	IXL skills
Quadratic functions	<ol style="list-style-type: none"> 1. Graph quadratic functions in vertex form C7T 2. Using the discriminant SMF
Exponential functions	<ol style="list-style-type: none"> 1. Write linear, quadratic, and exponential functions from tables AFA 2. Describe linear and exponential growth and decay S7T 3. Exponential growth and decay: word problems UKG
Evaluate functions	<ol style="list-style-type: none"> 1. Evaluate a function: plug in an expression VNZ
Graphs of polynomials	<ol style="list-style-type: none"> 1. Match polynomials and graphs XJU
Rational expressions and equations	<ol style="list-style-type: none"> 1. Add and subtract rational expressions ELX 2. Multiply and divide rational expressions LX9 3. Solve rational equations VLW
Radicals and rational exponents	<ol style="list-style-type: none"> 1. Multiplication with rational exponents LMC 2. Division with rational exponents AN5 3. Power rule V2J 4. Simplify expressions involving rational exponents I 2VX 5. Simplify expressions involving rational exponents II U96

Additional Topics in Math

Standard	IXL skills
Triangle theorems	<ol style="list-style-type: none"> 1. SSS, SAS, ASA, and AAS Theorems LER 2. SSS Theorem in the coordinate plane C5G 3. Hypotenuse-Leg Theorem VQJ 4. Triangle Proportionality Theorem 6WA
Congruence and similarity	<ol style="list-style-type: none"> 1. Congruence statements and corresponding parts CYL 2. Solve problems involving corresponding parts WYB 3. Similar triangles and indirect measurement JWK 4. Similarity rules for triangles XJQ
Circles	<ol style="list-style-type: none"> 1. Arcs and chords P63 2. Tangent lines CFV 3. Central angles and arc measures VZX 4. Arc length 7L9 5. Area of sectors XZQ 6. Circle measurements: mixed review TFF
Circles in the coordinate plane	<ol style="list-style-type: none"> 1. Find properties of circles from equations in general form EAJ 2. Convert equations of circles from general to standard form YM5 3. Graph circles from equations in general form 2AU
Radians and degrees	<ol style="list-style-type: none"> 1. Convert between radians and degrees EDC 2. Radians and arc length UA5
Trigonometry	<ol style="list-style-type: none"> 1. Find trigonometric ratios using the unit circle ZF7 2. Trigonometric ratios: find a side length MHJ 3. Trigonometric ratios: find an angle measure 84G 4. Sin, cos, and tan of special angles: radians ZK8
Complex numbers	<ol style="list-style-type: none"> 1. Multiply complex numbers VZ8