IB Incoming Student
Summer Math Review & Refresher

This tool is designed to help you identify any areas from Algebra I for which you may need support to ensure your success in Geometry or Algebra II next year.

This summer assignment is *optional* and will not be graded…HOWEVER, <u>you will have an assessment the first week of school *similar* to this assignment</u>, so we encourage you to complete it with fidelity to ensure you are prepared.

This assignment should be completed WITHOUT the use of a calculator, as you will not be using one on the follow-up assessment.

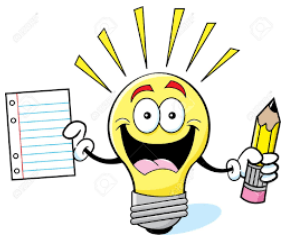
An answer key has been provided, so you may check your work.

Options for additional support:

- Every problem has a corresponding Khan Academy assignment which may be found in our Khan Academy class (join code: T2BYUKHY). These assignments link to video lessons and extra practice. To keep the assignments organized by section, they have been assigned "due dates", but you may ignore those dates. These activities are optional and will not be graded.
- For those students with an IXL account from their previous school, the supporting IXL modules have been listed.
- Mrs. Baker will be holding 3 OPTIONAL help sessions over the summer. She will have review centers of all topics that you may choose to attend/complete and cycle through. You may attend as many as you feel necessary, but please email her at bakerdo@pcsb.org within 1 week of the dates you are planning to attend, so she may ensure to have enough materials on hand.

Summer Pre-session Dates – 9am – 11am at Largo High School

Tuesday, 7/2/2024 Wednesday, 7/11/2024 Tuesday, 7/30/2024



It is our hope that you do not find anything in this task unfamiliar or particularly challenging, but if you do, please do not hesitate to take advantage of the extra support opportunities over the summer described above.

PART ONE: EXPRESSIONS

Simplify the following expressions without the use of a calculator. SHOW ALL WORK AND STEPS CLEARLY, EXPRESSING ANY REMAINDERS AS SIMPLIFIED FRACTIONS.

1. $24 - (16 \div 4) + 5(2)^3$

2. $-4^2 - 5^2$

3. $\frac{7(-2)-6+9}{-44 \div 4}$

4. $(-16) \div (-4) \cdot |8 - 15|$

5. $\frac{(3^2)(y^3)}{(3^{-2})(y^6)}$

6. $\left(\frac{3}{4}x^2 - \frac{2}{3}\right) + \left(-\frac{1}{2}x^2 + x + \frac{5}{6}\right)$

7. $3762 \div 26 =$

8. $3762(26) =$

PART TWO: SOLVING EQUATIONS

Solve the following equations/systems of equations without the use of a calculator. SHOW ALL WORK AND STEPS CLEARLY.

1. $2 - 3(3n - 2) = -10$

2. $-\frac{5}{4}x = \frac{5}{20}$

3. $\frac{27}{18} = \frac{9}{x}$

4. $x^2 - 4x = 5$

5. $y = 2x + 1$
   $y = -3x - 2$

6. $4x - 3y = 12$
   $2x + 3y = -6$

PART THREE: QUADRATIC EXPRESSIONS

1. Completely factor $2x + 4x^2$

2. Completely factor $x^2 - 25$

3. Completely factor $x^2 - 4x - 32$

4. Completely factor $3x^2 + 11x - 4$

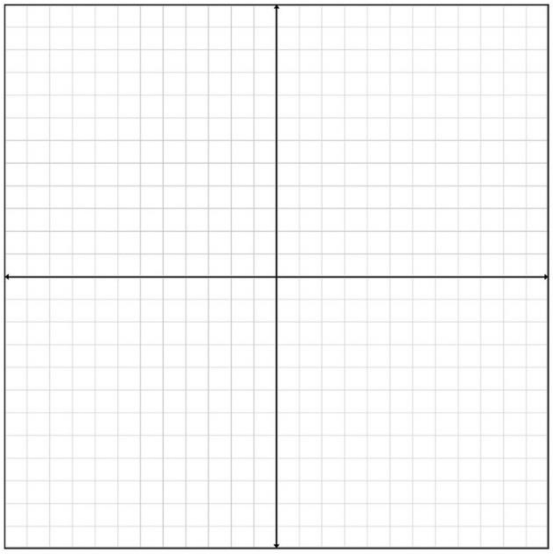
5. Completely expand $(2 + x)^2$

6. Completely expand $(2x + 7)(x - 3)$

PART FOUR: EQUATIONS OF LINES

1. Determine the equation of the line in slope-intercept form ($\boldsymbol{y = mx + b}$) contains the points (-1, 2) and (5, 6)

2. Graph the following equation $5x + 7y = 35$.



3. Use the graph on the left to identify the:

Slope: _____

x-intercept: _____

y-intercept: _____

4. Identify the slope of a line that is perpendicular to the line in Section 4 Problem 1.

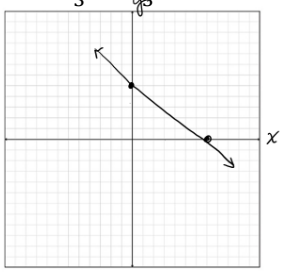
5. Find the equation of a line that is parallel to the line in Section 4 Problem 2 passing through the point (-5,1).

PART FIVE: RADICAL EXPRESSIONS AND OPERATIONS OF RADICALS

Simplify the following radical expressions.

1. $\sqrt{75}$ 2. $3\sqrt{2}+\sqrt{32}$ 3. $2\sqrt{3}\cdot 3\sqrt{2}\cdot 4\sqrt{15}$

Answers		***Khan Academy Assignment***	***IXL Module***
Section 1		(Section 1 assignments listed with a "due date" of 8/5)	
1.	60	Exponents with integer bases (7) Order of operations with fractions and exponents (7)	8th grade C.8
2.	-41	Exponents with integer bases (7) Order of operations with fractions and exponents (7)	Alg 1 R.1
3.	1	Order of operations with negative numbers (7)	8th grade A.5,A.9
4.	28	Order of operations with negative numbers (7) Finding absolute values (6)	7th grade R.6
5.	$\frac{81}{y^3}$	Multiply and divide powers (integer exponents) (8)	Alg 1 R.7,R.8,R.9
6.	$\frac{1}{4}x^2+x+\frac{1}{6}$	Adding & subtracting polynomials (A1) Adding & subtracting negative fractions (7)	8th grade L.4 Alg 1 CC.1
7.	$144\frac{9}{13}$	Multi-digit division (5)	5th grade E.13
8.	97 812	Multi-digit multiplication (5)	4th grade I.10, 5th grade D.14
Section 2		(Section 2 assignments listed with a "due date" of 8/6)	
1.	n = 2	Equations with parentheses (8)	8th grade M.15; Alg 1 J.5
2.	$x=-\frac{1}{5}$	Two-step equations with decimals and fractions (7)	8th grade M.17
3.	x = 6	Solving proportions (7)	8th grade G.1
4.	x = 5; x = -1	Solve quadratic equations: factoring (A1)	Alg 1 Z.3
5.	$x=-\frac{3}{5}; y=-\frac{1}{5}$	Systems of equations with substitution (A1)	Alg 1 O.8
6.	$x=1; y=-\frac{8}{3}$	Systems of equations with elimination challenge (A1)	Alg 1 O.10
Section 3		(Section 3 assignments listed with a "due date" of 8/7)	
1.	2x(1 + 2x)	Factoring quadratics with a common factor (A1)	Alg 1 X.1,X.2
2.	(x +5)(x – 5)	Difference of squares (A1)	Alg 1 X.6
3.	(x – 8)(x + 4)	Factoring quadratics intro (A1)	Alg 1 X.4
4.	(3x – 1)(x +4)	Factoring quadratics by grouping (A1)	Alg 1 X.5
5.	$4 + 4x + x^2$	Multiply perfect squares of binomials (A1)	Alg 1 W.9
6.	$2x^2 + x – 21$	Multiplying binomials (A1)	Alg 1 W.8

Answers		***Khan Academy Assignment***	***IXL Module***
Section 4		(Section 4 assignments listed with a "due date" of 8/8)	
1.	$y = \frac{2}{3}x + \frac{8}{3}$	Slope-intercept from two points (A1)	Alg 1 L.6
2.		Graph from linear standard form (A1)	Alg 1 L.11
3.	slope: $-\frac{5}{7}$	Slope from equation (A1)	Alg 1 L.17
	x-intercept: 7	Compare linear functions (A1)	Shortcut KSL
	y-intercept: 5		
4.	$-\frac{3}{2}$	Parallel & perpendicular lines from equations (A1)	Alg 1 L.18
5.	$y = -\frac{5}{7}x - \frac{18}{7}$	Write equations of parallel & perpendicular lines (A1)	Alg 1 L.19
Section 5		(Section 1 assignments listed with a "due date" of 8/9)	
1.	$5\sqrt{3}$	Simplify square root expressions (A1)	Alg 1 EE.1
2.	$7\sqrt{2}$	Adding and subtracting irrational numbers (A1)	Alg 1 EE.5
3.	$72\sqrt{10}$	Multiplying and dividing irrational numbers (A1)	Alg 1 EE.3, EE.4