

MATH SUMMER ASSIGNMENT PRE-CALCULUS

Mathematics is foundational and it is crucial that students maintain certain skills and conceptual understandings to be able to succeed in future mathematics courses. It is for this reason that we have developed numerous summer assignments that are designed to help students review, refresh, and improve upon **prerequisite skills** to prepare for future courses.

Students are required to complete summer assignments to ensure that they are prepared for the year. The assignments were designed by content teachers to help students be better prepared for math work in the fall. Students will be given time in class to clarify questions, practice concepts and will be assessed during the first week of school.

For College Pre-Calculus, the summer assignment is due the first week of class and will be graded as a homework assignment.

For Honors Pre-Calculus, the summer assignment is due the first week of class and will be graded as a formative assessment.

Pre-Calculus Summer Assignment
Note: Show all of your work in the space provided.

COLLEGE LEVEL: SKIP 3d, 3e, 3f, 5c, 8c HONORS LEVEL: Complete all of the problems
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Algebraic Expressions - Follow the directions in each box for each set.

1. Evaluate each given the function: $f(x) = \frac{1}{2}x - 2$.		
a) $f(-5)$	b) $f(2)$	c) $f\left(\frac{1}{2}\right)$
2. Simplify each expression using appropriate exponent rules. (no negative exponents)		
a) $(-3x^3)^2(5xy^2)$	b) $\frac{r^3t^{-7}}{rt^3}$	c) $\left(\frac{y^2}{x^3}\right)^{-5}$
3. Factor each expression completely.		
a) $9x^2 - 25$	b) $2x^2 - 5x - 3$	c) $5x^2y^2 - 30x^3y$
d) $x^4 + 4x^2 - 32$	e) $x^4 - 16$	f) $x^3 - x^2 - 4x + 4$

Algebraic Equations - Follow the directions in each box for each set.

4. Solve each equation.		
a) $7x + 2 = 3x + 94$	b) $15 - x = 23 - 2x$	c) $4x - 2(x - 3) = -38$

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Algebraic Equations - Follow the directions in each box for each set.

5. Solve each equation by factoring.

a) $x^2 + 6x + 8 = 0$

b) $x^2 + 3x - 10 = 0$

c) $3x^2 = 16x + 12$

6. Solve each equation by using square roots. (no decimals)

a) $5x^2 = 80$

b) $16x^2 - 9 = 0$

c) $(x - 5)^2 = 49$

7. Solve each equation by using the Quadratic Formula. (no decimals)

a) $x^2 - 4x + 3 = 0$

b) $x^2 - 2x - 11 = 0$

c) $9x^2 - 12x + 5 = 0$

8. Solve each equation. Be sure to check for extraneous solutions.

a) $3\sqrt{x} + 3 = 15$

b) $\sqrt{x+7} = x + 1$

c) $(x + 5)^{\frac{2}{3}} = 4$