

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.

This year, we are requiring students 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.

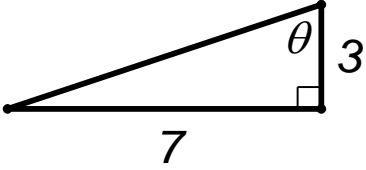
Pre-Calculus Summer Assignment

<p>COLLEGE LEVEL: Complete #1-3, 5, 7, 8, 10, 11, and 14 HONORS LEVEL: Complete all of the problems</p>
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Note: Show all of your work in the space provided and write your answers on the separate answer sheet.

Follow the directions in each box.

<p>Simplify the expression:</p> <p>1. $x^3 \left(x^{\frac{1}{3}}\right)^{\frac{1}{2}}$</p>	<p>Simplify the expression:</p> <p>2. $\left(\frac{2}{3} + 3i\right)\left(\frac{2}{3} - 3i\right)$</p>	<p>Solve by finding square roots (no decimals):</p> <p>3. $16x^2 - 9 = 0$</p>
<p>Solve by completing the square:</p> <p>4. $9x^2 - 12x + 5 = 0$</p>	<p>5. Solve by using the quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$</p> <p>$3x^2 + 4x + 10 = 0$</p>	<p>Solve the equation:</p> <p>6. $(x + 5)^{\frac{2}{3}} = 4$</p>
<p>7. Write the equation in slope-intercept form of the line that passes through $(-10, 3)$ and $(-4, -5)$.</p>	<p>8. For the function $f(x) = \frac{1}{2}x - 2$, find $f(-5)$, $f(4)$, and $f\left(\frac{1}{2}\right)$.</p>	<p>Write the equation in vertex form:</p> <p>9. $y = 4x^2 + 7x$</p>

<p>Write the expression in logarithmic form:</p> <p>10. $\left(\frac{1}{3}\right)^3 = \frac{1}{27}$</p>	<p>Write the expression as a single logarithm:</p> <p>11. $\frac{1}{2}\log_2 81 - \log_2 3$</p>	<p>Use this triangle for #12 & #13</p> 
<p>12. Find $\sin \theta$</p>	<p>13. Find $\cos \theta$</p>	<p>14. Graph the function $y = 2^x$ by substituting values for x.</p>
<p>15. Solve the equation by using synthetic division to find the first root, and then use the quadratic formula to find the remaining roots.:</p> $2x^3 + 9x^2 + 14x + 5 = 0$		

Name: _____

Honors Pre-Calculus Summer Math Packet ANSWER SHEET:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

15. _____

14.

