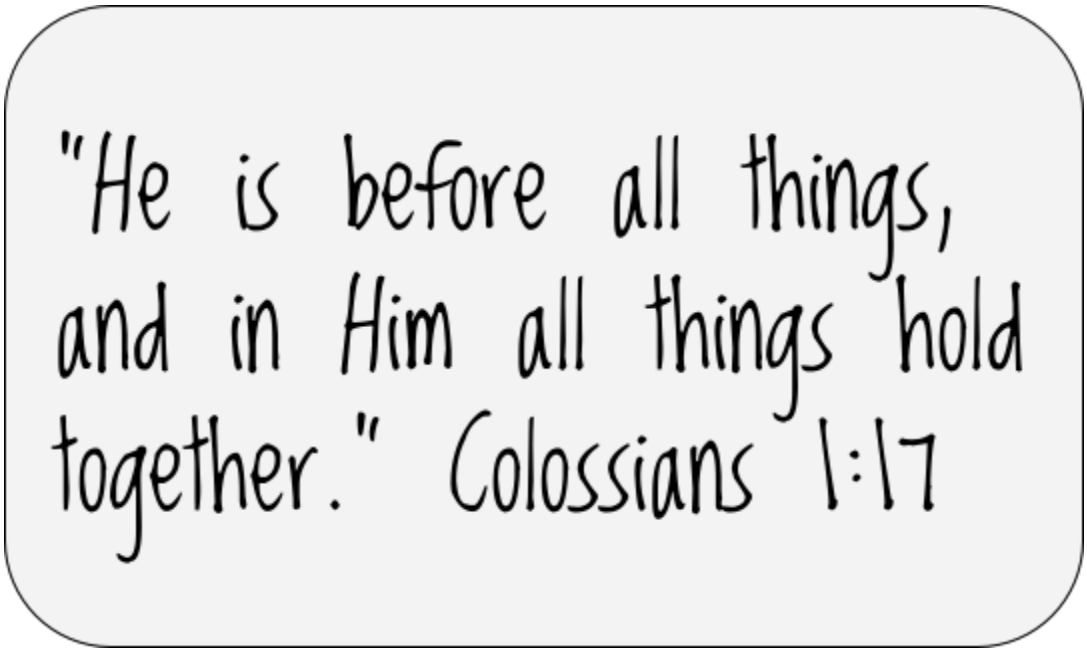
Honors Pre-Calculus

Summer Assignment

Briarwood Christian School



The attached assignment is due at the beginning of the first day of class. These questions address prerequisite skills for success in honors pre-calculus. Additionally, these skills will be assessed on the first exam.

Name: _____

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Honors Pre-Calculus
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1. Simplify the expression below. $(9m^3n^5)^{-2} \cdot (-6m^2n)^4$	**2.** Simplify the expression below. $2x^6y^2(4x^2y^3 - 3y) + 3x^8y^5$
3. Simplify the expression below. $(4y + 1)^3$	**4.** Completely factor the expression below. $c^4 - c^2 - 72$
5. Completely factor the expression below. $8w^3 + 125$	**6.** Completely factor the expression below. $48m^5n - 3mn^5$

7. Completely factor the expression below.

$$3a^3 + 2a^2 - 48a - 32$$

8. Simplify the expression below.

$$\frac{2v^4 - 128v}{6v^3 - 24v^2}$$

9. Simplify the expression below.

$$\frac{p^2 - 3p - 28}{5p + 20} \cdot \frac{10p^2}{49 - p^2}$$

10. Simplify the expression below.

$$\frac{3r - 5}{4r^2 - 4r + 1} \div \frac{6r^2 - 7r - 5}{4r^2 - 1}$$

11. Simplify the expression below.

$$\frac{2n}{n+1} + \frac{n-3}{n^2-1} - \frac{7}{n-1}$$

12. Simplify the expression below.

$$\frac{\frac{1}{21k^3} - \frac{3}{7k}}{1 - \frac{1}{3k}}$$

13. Simplify the expression below.

$$2\sqrt{128} + 4\sqrt{20} - 2\sqrt{50}$$

14. Simplify the expression below.

$$\sqrt[3]{-15v^5} \cdot \sqrt[3]{9v^3}$$

15. Simplify the expression below.

$$4\sqrt{3}\left(\sqrt{6} - \sqrt{2}\right)^2$$

16. Simplify the expression below.

$$\frac{\sqrt[4]{240a^{22}}}{\sqrt[4]{3a^7}}$$

17. Simplify the expression below.

$$\frac{-6\sqrt{32}}{3\sqrt{3}}$$

18. Simplify the expression below.

$$\frac{4\sqrt{5}}{\sqrt{10} - \sqrt{12}}$$

19. Write the expression below in exponential form.

$$\sqrt[3]{15k^4}$$

20. Simplify the expression below. Write your answer in simplest radical form.

$$\frac{w^{-\frac{1}{6}} \cdot w^{\frac{8}{3}}}{w^{-1}}$$

21. Simplify the expression below.

$$(i^6)^2 \cdot 5i^7$$

22. Simplify the expression below.

$$(8-2i)(-6+4i)-(-10-7i)$$

23. Simplify the expression below.

$$\frac{-8+5i}{3i}$$

24. Simplify the expression below.

$$\frac{2i}{(3-i)^2}$$

25. Solve the equation below.

$$-\frac{9}{4}\left(8k-\frac{16}{3}\right)+17=5-12k$$

26. Solve the equation below.

$$8-(20-4c)=4(c-3)$$

27. Solve the equation below for a.

$$12a^2+5b=8b$$

28. Solve the equation below. Check for extraneous solutions.

$$|6-2x|-10=-2$$

29. Solve the equation below. Give your answer(s) in simplest form.

$$12y^2 - 17y - 5 = 0$$

30. Solve the equation below. Give your answer(s) in simplest form.

$$r^2 + 15r + 50 = 6 - r$$

31. Solve the equation below. Give your answer(s) in simplest form.

$$\frac{1}{3}v^2 + 27 = 12$$

32. Solve the equation below. Give your answer(s) in simplest form.

$$5n^2 = 12n - 8$$

33. Standing from the top of a platform, Frank shot an arrow vertically into the air at an initial velocity of 118 ft/s. The height of the arrow, h, at t seconds is modeled by the equation $h = -16t^2 + 118t + 15$. How many seconds will it take the arrow to reach the ground?

34. Solve the equation below. Give your answer(s) in simplest form.

$$17 = 11 + 2\sqrt[4]{16 - 5p}$$

35. Solve the equation below. Check for extraneous solutions.

$$\sqrt{4x-11}+2=x$$

36. Solve the equation below. Check for extraneous solutions.

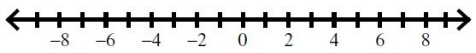
$$\frac{1}{2}-\frac{2m^2+6m+4}{m^2}=\frac{1}{2m^2}$$

37. Solve the equation below. Check for extraneous solutions.

$$1+\frac{3}{c^2-11c+30}=\frac{3}{c-6}$$

38. Solve the inequality below and graph the solution. Then, write the solution in interval notation.

$$-2(4v-9)\le 2(6-v)$$



39. Which of the following represents the solution to the inequality below?

$$|2y-4|>6$$

A. $(-5, 1)$

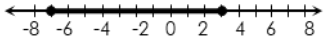
B. $(-1, 5)$

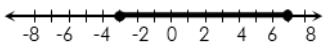
C. $(-\infty, -1)\cup(5, \infty)$

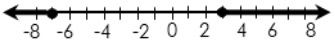
D. $(-\infty, -5)\cup(1, \infty)$

40. Which of the following graphs represents the solution to the inequality below?

$$9|2-k|+8\le 53$$

A.


B.


C.


D.