



Lawrence High School's PreCalculus REQUIRED 2019 Summer Assignment





Welcome to Pre-Calculus:

The purpose of this summer assignment is to help you review important algebraic concepts to best prepare you for the Pre-Calculus curriculum this coming school year. The material included in this assignment is the foundation for the first unit of study and the course. The completion of this packet should be done independently while using resources that are available to you (notes, internet, textbooks, etc.). Do not try to complete the entire packet the day before it is due.

Directions:

- You must complete ALL problems.
- Show all your neat and organized work for every problem.
- Be sure your name is on each additional work page.
- This assignment is due the first full week of school and will be graded.
- A quiz will be given on these concepts.
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Resources: You have your notes and handouts from your Algebra 2 class. There is also a Google Classroom created for the summer assignment where you can log on to ask for help. For additional examples and support you can reference any of the sites listed below and search the skill/concept. **Google Classroom Group Code:**

- Go to www.classroom.google.com
- Click on I'm a Student
- Enter access code to access the class.
- CODE: **pya76b**
- KhanAcademy.com
- YouTube.com or TeacherTube.com
- MathIsPower4u.com
- IXL.com

Concepts covered in this packet:

- Factoring
- Exponent rules
- Radical form/exponential form
- Simplifying radicals
- Rational Expressions
- Quadratics



Name _____

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Factor each completely.

1) $2b^3 + 18b^2$

2) $n^4 - 12n^3 + 35n^2$

3) $2p^2 - 17p + 21$

4) $3x^2 - 17x - 90$

5) $6u^4 + 42u^2 + 72$

6) $x^4 - 8x^2 - 20$

7) $16m^2 - 1$

8) $9n^2 + 24n + 16$



Simplify. Your answer should contain only positive exponents.

$$9) \frac{(v^4)^4}{u^{-3}v^{-1} \cdot 2vu^3}$$

$$10) \left(\frac{2x^4y^3}{2yx^4 \cdot x^4} \right)^2$$

$$11) \frac{(2x^{-3}y^4)^{-2}}{x^{-1}y^2 \cdot (yx^3)^3}$$

$$12) -\frac{3ab^{-2}c^0 \cdot 3a^0b^{-1}}{3a^{-1}b^{-3}c^2}$$

Simplify.

$$17) (x^{15})^{\frac{3}{5}}$$

$$18) (343x^3)^{\frac{1}{3}}$$

$$19) \frac{2\sqrt{4}}{5\sqrt{5}}$$

$$20) \frac{\sqrt{3}}{4\sqrt{6}}$$

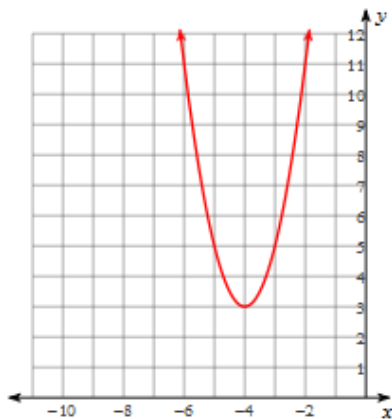
$$21) \frac{\sqrt{3}}{2\sqrt{2}}$$

$$22) \frac{3\sqrt{4}}{\sqrt{5}}$$

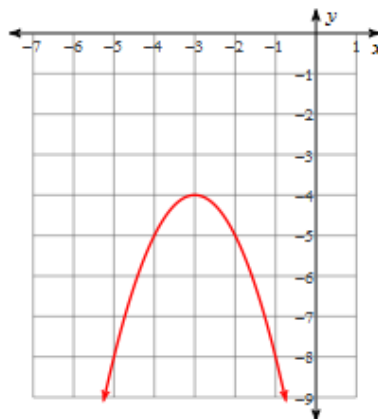


Find the vertex of each quadratic, state if it opens up or down. Then, sketch the graph of each function.

23) $f(x) = 2(x + 4)^2 + 3$



24) $f(x) = -(x + 3)^2 - 4$



Simplify each and state the excluded values.

25) $\frac{30r^2}{80r^2}$

26) $\frac{20a}{20a^4}$

27) $\frac{v^2 + 8v + 7}{2v^2 + 14v}$

28) $\frac{n^2 + 13n + 30}{3n + 9}$

29) $\frac{49m + 14}{21m^2 + 49m - 70}$

30) $\frac{3x^2 + 18x - 21}{x^2 - 4x + 3}$