



This is a self-test to determine if the Geometry Prep Class is suitable for your student.

A student who is ready for this intensive class should be able to answer correctly **20 of the Fundamentals problems and 3 of the Problem-Solving problems correctly within 1 hour. No calculator is allowed.** If a student struggles with these problems, then the student should consider reviewing his or her Algebra 1 skills and basic Geometry, possibly through our FlexMath program.

Fundamental problems:

1. Compute: $((-3)^2 - 7)^3 - ((-2)^2)^3$
2. Compute: $\left(-\frac{1}{3}\right)^{-6}$
3. Compute: 2^{-3}
4. Compute: $10000^{\frac{1}{2}}$
5. Compute: $\sqrt{20} + 2\sqrt{45} - 3\sqrt{500}$
6. Factor out the greatest common factor of each term: $-64t^2 + 16t + 8$
7. Factor out the greatest common factor of each term: $81z^3 - 27z + 9z^2$
8. Simplify: $\frac{21t}{3t^2+6t}$
9. Simplify: $\frac{3x^2-9x}{4x^3-12x^2}$
10. Simplify: $\frac{8y-3x}{3} + \frac{-7y+5x}{4}$
11. Solve: $\frac{5x-4}{2} = \frac{16x+1}{7}$
12. Solve: $-10\sqrt{x-5} + 3 = -57$
13. Solve: $|x - 3| > 4$
14. Solve: $\left(\frac{x}{2} - 5\right)(x + 1) \geq 0$
15. Solve: $-3 \cdot |19x| + 11 \geq -46$
16. Subtract: $(x^7 - 13x^4 + 5x - (-2)) - (-2x^7 - 13x^4 - 5x^2 + x + 5)$
17. Multiply: $(x^3 - 27x - 9) \times (x - 1)$
18. Divide: $(x^3 + 9x^2 - x - 9) \div (x^2 - 1)$
19. Find the numerical value: $\frac{2^{-3} \cdot 4^3}{8^{-2}}$

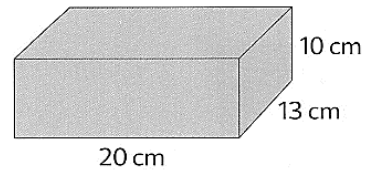
20. Find the numerical value: $\frac{3^{-12} \cdot 9^5}{27^{-4} \cdot 3^{12} \cdot 9^{-2}}$

21. Solve: $6x^2 - 48 = -12x$

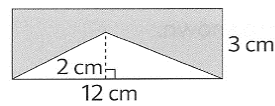
22. Solve: $5x^2 - 60 = -20x$

Problem Solving

1. Find the surface area and the volume of the following figure.

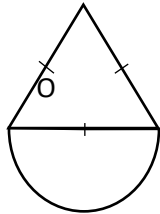


2. Find the shaded area of the rectangle.

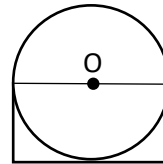


3. Find the radius of each circle or part-circle in each figure.

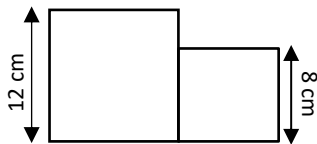
a. Perimeter of the equilateral triangle is 36 cm.



b. Perimeter of the rectangle is 24 cm



4. The figure below is made up of two squares. What is the perimeter of the figure? Show your work.



5. Find $\angle x$.

