

The Art of Problem Solving Online Classes
Are You Ready for
Algebra 1?

If you've mastered arithmetic well enough to solve the problems below, you are ready for the Art of Problem Solving Online Class **Algebra 1**. Answers to these problems are on the following page. Do not use a calculator.

1. **Order of operations.** Evaluate:

- (a) $15 + 6 \cdot 7$
- (b) $(3 - 4) - (-5 + 1)$
- (c) $3 \cdot (6 - 8)$

2. **Solving linear equations.**

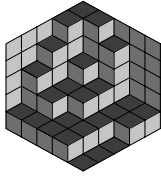
- (a) Find x : $31x + 24 = 365$.
- (b) Find n : $7n - 4 = 2n + 16$.
- (c) Find y : $3(10 + y) = 81$.

3. **Working with variables.**

- (a) Expand the product $9(3x + 7)$.
- (b) Simplify: $7a - 5b + 3(6a + b)$.
- (c) Simplify: $a - (-7a - 3)$.

4. **Fractions, decimals, and basic percents.**

- (a) Convert to a fraction: $.6144$.
- (b) Convert to a decimal: $17/40$.
- (c) 17 is what percent of 20?
- (d) What is $\frac{9}{5} - \frac{4}{3}$?
- (e) What is $\frac{3/6}{2/5}$ in simplest form?



The Art of Problem Solving Online Classes
Are You Ready for
Algebra 1?

The answers to Are You Ready for Algebra 1 are below. (The answers to problem sets and challenges given in the class will include full detailed solutions as opposed to the mere answers provided below.)

1. (a) 57
(b) 3
(c) -6

2. (a) $x = 11$
(b) $n = 4$
(c) $y = 17$

3. (a) $27x + 63$
(b) $25a - 2b$
(c) $8a + 3$

4. (a) $384/625$
(b) 0.425
(c) 85%
(d) $7/15$
(e) $5/4$