

9.—ALGEBRA, D.

[Any five questions make a full paper.]

1. Simplify :—
 $\frac{1}{2}x - \frac{1}{2}(\frac{3}{2}y - \frac{1}{2}z) - [x - \{\frac{1}{2}x - (\frac{1}{2}y - \frac{1}{2}z)\} - (3y - \frac{1}{2}z)]$
2. (a) Evaluate $a - \{\sqrt{(a+1)} + 2\} + (a - \sqrt[3]{a})\sqrt{(a-4)}$ when $a = 8$. (b) Divide $(x^6 - y^6)$ by $x + y$.
3. Given $\frac{3}{8}(x-1) - \frac{6}{5}(x-4) = \frac{2}{3}(x-6) + \frac{4}{5}$. Find the value of x .
4. Given $\begin{cases} 6y - 5x = 18 \\ 12x - 9y = 0 \end{cases}$ find x and y .
5. Find three consecutive numbers whose sum shall equal 84.
6. A takes 3 hours longer than B to walk 30 miles; but if he doubles his pace he takes 2 hours less time than B. Find their rates of walking.
7. Collect and simplify $\frac{x^2 - 2x + 3}{x^3 + 1} + \frac{x - 2}{x^2 - x + 1} - \frac{1}{x + 1}$.

10.—GEOMETRY, D.

[Only five questions to be answered. Shortest form of proof preferred, providing every statement is proven by reference to Euclidean propositions.]

1. (a) What is a right angle? (b) Name the different parts of a proposition in order, from the "General Enunciation" to the "Conclusion." (c) What propositions of the First Book prove triangles to be equal in every respect? (d) What propositions state that the triangles are equal, though not in every respect?
2. (a) On a given straight line P Q describe the equilateral triangle P R Q. (b) Prove the correctness of the construction.
3. Prove that the hypotenuse is the greatest side of a right angled triangle, using no reference beyond Euclid I, 19.
4. If a straight line fall on two parallel straight lines, then it shall make the alternate angles equal to one another.
5. The complements of the parallelograms about the diagonal of any parallelogram are equal to one another.
6. Show that the diagonals of a rhombus bisect one another at right angles.
7. A triangle is divided by each of its medians into parts of equal area.

GRADE C, (X.)

1.—ENGLISH LANGUAGE, C.

1. Explain the terms: Redundancy, Tautology, Pleonasm, Euphemism, Epigram, Alliteration, Melody, Rhyme, Pentameter.

2. "Clime of the unforgotten brave,
Whose land from plain to mountain cave
Was freedom's home, or glory's grave,
Shrine of the mighty, can it be,
That this is all remains of thee?"

Write a paragraph, naming the author of the extract given above, the circumstances under which it was written, and explaining the references made.

3. What lesson does Goldsmith seek to teach in his poem the Deserted Village?
4. What persons are supposed to be described in the poem? Give in your own words a short description of any one of them.
5. (a) Quote from the poem a description of the Village in prosperity or the same under adversity. (b) Give the meaning and etymology, where you can, of the following words:—*nightingale, impotence, gambol, hamlet, rustic, mansion, disaster, equinoctial.*