

better investment, and what would be the difference in the annual income from \$2,000 invested in each?

5. A rectangular field whose length is 4 times its breadth contains 10 ac.; find its perimeter.

6. What will \$280 amount to in $3\frac{1}{2}$ years at 7 per cent. compound interest?

7. Find the value of
 $.00185 \times .07 \div 3.024$.

8. How many times larger is a spherical ball 4 inches in diameter, than one 3 inches in diameter?

9. If it cost £15 1s. to make a cubical cistern, open at the top, with lead, at 1s. 9d. per square foot, inside measurement, how many gallons will the cistern hold?

(The imperial gallon contains 277,274 cub. inches.)

10. If A's income be 150 per cent. more than B's, how much per cent. is B's income less than A's?

Value 100. Any eight correct solutions will be considered a full paper.

ALGEBRA AND GEOMETRY.

1. Resolve into elementary factors :

$$9x^2y^2 - 3xy - 6y^4; x^6 - 1.$$

2. Divide 64 into two such parts that $\frac{1}{4}$ of the greater is equal to $\frac{2}{3}$ of the less.

3. Divide $x^6 - 2x^3 + 1$ by $x^2 - 2x + 1$.

4. Solve the equation :

$$\frac{x+4}{3x+5} + 1\frac{1}{3} = \frac{3x+8}{2x+3}$$

5. Give the definitions of plane angle, polygon, segment of a circle, hypotenuse, rectangle, trapezium.

6. Parallelograms on the same base and between the same parallels are equals. Prove.

7. In any right angled triangle the square which is described on the side subtending the right angle is equal to the squares described on the sides which contain the right angle. Prove.

8. Construct an isosceles triangle having the vertical angle four times each of the angles at the base.

THE *Educational Weekly* says : "The schools of the Old World are in advance of ours in many important respects. In the German, Swedish and Danish schools, not only are the subjects of natural history taught in all the schools, by systematic and intelligent methods, but large collections of typical specimens are made for the use of the teachers in their work of instruction. These collections, or small museums, belong to the larger schools, and specimens are loaned from them to teachers in every part of the country."

In Toronto we have a very fair lot of specimens at the Normal School, which we are assured by Dr. May, "is no mere collection of curiosities." We should like to know whether it has ever been anything else but an "Old Curiosity Shop" to the thousands of students who have "gone through" the

school. For years, it has been complained of by the students that little or nothing is done by them, or for them, during the first two or three weeks of their attendance, and nothing to speak of, the rest of the time (!). Why not, then, make *practical* use of the specimens which have so long been carefully placed under glass, and at least do something towards "opening the eyes of the blind," and providing work for "idle hands to do?" This is a pregnant query, and deserves the attention of the Minister. Were we privileged to act as his mentor we should whisper to him, also, that it would not be a bad plan to have the natural science objects copiously labelled. As it is, the only information vouchsafed is in the shape of a few numerals, without a corresponding catalogue, so far as we know, to which reference may be made.