The University of the State of New York

213TH HIGH SCHOOL EXAMINATION

ADVANCED ARITHMETIC

Tuesday, June 15, 1915 — 9.15 a. m. to 12.15 p. m., only

Write at top of first page of answer paper (*a*) name of school where you have studied, (*b*) number of weeks and recitations a week in advanced arithmetic.

The minimum time requirement is two recitations a week for a school year or four recitations a week for half a school year.

Answer eight questions.

1 How many pounds of coffee at 24¢ a pound must a merchant mix with 6 pounds at 36¢ a pound, in order that he may sell the mixture at 40¢ a pound and gain $33\frac{1}{3}$%?

2 A rectangular court is 50 yd by 30 yd. It has walks joining the middle of the opposite sides, each 6 ft wide, and a walk of the same breadth running all around it. The remainder is covered with grass. The walks cost $12\frac{1}{2}$¢ a square foot and the sodding 70¢ a square yard. Find the total cost.

3 What will be the weight of a bowling ball 6″ in diameter that is to be turned from a rectangular block $6\frac{1}{4}$″ square and 7″ long, if the block weighs $13\frac{1}{2}$ lb?

4 Add

7543216
8479219
247642
94002
8789281
4872942
217213
4020899
3842746
275943
3839942
7487392
298274
291
48290
9728463
29847
9374813
4689473
4973820
400751

5 A man fences a rectangular orchard containing 864 trees; the number of rows is to the number of trees in a row as 3:2. If the trees are 7 yards apart and the fence is 5 yards from the outside rows, how long must the fence be?

6 In what time will a 2 inch pipe fill a tank in the form of a hemisphere 8 feet in diameter, if the water in the pipe has a velocity of 4 inches a second?

7 The altitude of the frustum of a square pyramid is 15 feet, a side of the lower base is 12 feet and the diagonal of the upper base is 12.02 feet; find the volume of the frustum.

8 Find the cost of

16 planks	$14\frac{1}{3}$′ long	11″ wide	3″ thick	@ $28 per M	
21 "	11′ "	8″ "	$1\frac{7}{8}$″ "	@ $35	"
207 boards	12′ "	6″ "	$\frac{5}{8}$″ "	@ $51	"

9 A note for $385.54 at 6%, dated Jan. 3, 1911, has the following indorsements: June 5, 1912, $15; Aug. 3, 1912, $110. How much was due Mar. 1, 1915?

10 *a* In an arithmetic progression $d=15$, $l=181$, $a=31$; find n and S.

b In a geometric progression $a=2$, $r=5$, $l=6250$; find S and n.