Report of the Chief Superintendent of Schools for P. E. Island.

The annual report on the public schools of Prince Edward Island for the last year, has recently been published. It indicates progress in many directions, while there are signs of retrogression in others. There are more schools, a better attendance, and more teachers. There is, however, a decrease in the average salary paid to teachers. This is to be regretted.

The statistical tables show an increase in the number of pupils studying Reading Books II, III, IV and VI, writing, grammar, history, geography, Latin, Greek, French, algebra and geometry, and a decrease in the number studying the primer, reading book V, arithmetic, orthography, composition, music, book-keeping, drawing, scientific temperance and agriculture. It is to be regretted that the numbers studying the important subjects of orthography and composition are fewer than in the preceding year. The natural sciences appear to receive little or no attention in the schools of the province, and the important subject of agriculture is receiving less attention than formerly.

In his comments on inspection, the superintendent directs the attention of the government to the necessity for the appointment of an additional inspector.

Stress is laid upon the insufficiency of accommodation in the Prince of Wales College, and the authorities are urged to provide a larger building.

QUESTION DEPARTMENT.

A. P.—(1) An officer can form the men of his regiment into a hollow square twelve deep. The number of men in the regiment is 1296. Find the number of men in the front of the hollow square?

Let x denote the number of men in the front line. Then the next line will contain $x-2$ men, etc.; two less in each line $x^2 =$ number of men if it were a solid square.

$$x^2 - (x - 24^2) = 1296, \quad x = 39$$

(2) An officer can form his men into a hollow square four deep, and also into a hollow square eight deep: the form in the latter formation contains sixteen men fewer than in the former formation: find the number of men?

Let x denote the number of men in the front rank of the first formation; then as each rank decreases by two and there are four ranks, the whole number of men will equal $x^2 - (x-8)^2$. In the second formation the front rank will be $x-16$ and consequently the whole number of men will be $(x-16)^2 - (x-16-16)^2$

Therefore $x^2 - (x - 8^2) = (x-16)^2 - (x-16-16)^2$

$$x = 44$$

The whole number $= x^2 - (x - 8^2)$

$$= (44)^2 - (44-8)^2 = 640$$

(3) Find the length of the diameter of a circle when the chord cutting off $\frac{1}{3}$ of the circumference is twenty inches.

Let AB be the chord and C the centre of the circle. Bisect AB in D. Join DC and produce the line DC to the circumference in E. Then ABE is an equilateral triangle. $DE = \sqrt{20^2 - 10^2}$ Produce ED to the circumference in F. Then DF will equal 10^2 divided by $\sqrt{20^2 - 10^2}$ and the diameter $= \sqrt{20^2 - 10^2} + 10^2 \div (\sqrt{20^2 - 10^2})$

Subscriber.—Calculate the limits of error made in taking $\frac{355}{113}$ as an approximate value of 3.1415926 to seven places of decimals.

$\frac{355}{113} = 3.1415929 +$ The first six places in the decimal are the same. Consequently the error lies between the last two.

L. A. M.—(1) ABC is any triangle: required to draw a straight line parallel to the base BC, and meeting the other sides MD and E, so that DE may be equal to the difference of BD and CE.

Prodnce BC to F. Bisect the angles ACF, ABF by CO, BO. Draw OED parallel to BC meeting AE in E and AB in D. The angle OBC = angle DCB = angle DBO. Therefore DB = DO. Similarly, EO = EC. But DE = the difference of DO and DE, this is of BD and EC.

(2) If a straight line is divided internally in medial section, and from the greater segment a part be taken equal to the less: show that the greater segment is also divided in medial section.

Let AB be divided in medial section at H.

From A cut off AX, = BH.

Given $AB.BH = AH^2$ and $AX = BH$.

Now $AB.BH = AH.HB + HB^2$ (II 3)

$= AH.AX + AX^2$;

Also $AH^2 = AH.AX + AH.HX$ (II 2)

Therefore $AH.AX + AX^2 = AH.AX + AH.HX$;

$AX^2 = AH.HX$

That is, AH is divided in medial section.

(3) ABC is a triangle right-angled at C, and DE is drawn from a point D in AC perpendicular to AB; shew that the rectangle AB.AE is equal to the rectangle AC.AD.

Join BD.

Then from the triangle ADB, since DE is drawn perpendicular to AB,

$BD^2 = AD^2 + AB^2 - 2AB.AE$ (II, 13).

Again, from the triangle ADB, since BC is drawn perpendicular to AD produced.

$BD^2 = AD^2 + AB^2 - 2AD.AC$ (II, 13)

Therefore AB.AE – AD.AC.