

La racine carrée de 108900 = 330 verges, la longueur du carré et en même temps la largeur du champ. *Rép.*

La longueur = les  $\frac{4}{3}$  de la largeur.

$\frac{3}{4}$  de la largeur = 330 verges

$\frac{1}{4}$  de la largeur =  $330 \div 3$

$\frac{3}{4}$  de la largeur =  $330 \times \frac{4}{3} = 440$  verges. *Rép.*

*Autre solution:* Les surfaces des figures semblables sont entre elles comme les carrés de leurs côtés homologues.

Nous avons deux figures semblables une dont les dimensions sont 4 et 3 et la surface 12, l'autre dont la surface est de 145200 verges.

$$\begin{array}{r} 12 \\ 12 \end{array} \quad \begin{array}{r} 145200 \\ 145200 \end{array}$$

$$\begin{array}{r} 4^2 \\ 12 \end{array} \quad \begin{array}{r} x^2 \\ 145200 \end{array}$$

$$\begin{array}{r} 16 \\ 12 \end{array} \quad \begin{array}{r} x^2 \\ 145200 \end{array}$$

Multipliant par  $16x^2$  on a :

$$12x^2 = 145200 \times 16$$

$$\text{D'où } x^2 = (145200 \times 16) \div 12 = 12100 \times 16$$

Extrayant la racine carrée on a :  $x = 110 \times 4 = 440$  verges de longueur. *Rép.*

$145200 \div 440 = 330$  verges de largeur. *Rép.*

## LANGUE ANGLAISE

### Dictation and Composition

STORY OF SIR RICHARD ARKWRIGHT.

Arkwright was a barber. His parents had been very poor people; and as he was the youngest of a family of thirteen, it may be readily supposed that all the schooling he got was of the most meagre kind,—if indeed, he ever was at school at all. He was of a very ardent temperament, however, and when he once took a thing in hand, he stubbornly persevered in carrying it through to the end.

About the year 1760, being then nearly thirty years of age, Arkwright got tired of the shaving, which brought him but a very scanty livelihood, and resolved to try his fortune in a trade, where there was more scope for his activity. He therefore began business as a dealer in hair, traveling up and down the country to collect it, dressing it himself, and then disposing of it in a prepared state to the wig-makers.

He thrived so well, that in a short time he was able to lay by a little money and to marry. He

was very fond of spending what leisure time he had in making experiments in mechanics; and for a while he was very much taken up with an attempt to solve the attractive problem of perpetual motion. Although he of course left the question unsolved, the bent thus given to his thoughts had most valuable consequences.

Living in the midst of a manufacturing population, Arkwright was accustomed to hear daily complaints of the difficulty of procuring sufficient yarn to keep the looms employed, and of the restriction thus placed on the manufacture of cotton goods. Being of a mechanical turn, he was led to think how the difficulty might be lessened, if not got rid of altogether.

Arkwright assisted by a clock-maker of the name of Kay, soon became so engrossed in his new task, and so confident of success, that he began to neglect his regular business. All his thoughts, and nearly all his time were given up to the great work he had taken in hand. His trade fell off; he spent all his savings in buying materials for models, and in getting them put together; and he fell into very poor