Solution: Trouvons d'abord la surface d'un secteur de 60° dans un cercle de 6 pieds de rayon.

$(6^2 \times 3.1416) \times 60/360 = 18.8496$ pieds carrés, la surface du secteur. Mais le secteur est composé du segment et d'un triangle ayant pour base la corde du segment et pour côtés le rayon du cercle.

Mais la corde d'un arc de 60° = toujours le rayon du cercle = dans le cas présent 6 pieds. Dans ce cas le triangle est donc équilatéral. Pour trouver la surface d'un triangle équilatéral on multiplie le carré du côté par .433013.

$6^2 \times .433013 = 15.588468$, la surface du triangle.

$18.8496 - 15.588468 = 3.261132$, la surface du segment.

11. On demande la surface et le volume d'un prisme rectangulaire de 5 pieds de hauteur, de 4 pieds de longueur et 3 pieds de largeur.

Solution : Si on appelle base du prisme le rectangle qui a pour côtés 4 pieds et 3 pieds, on aura :

$4 + 3 + 4 + 3 = 14$ pieds , périmètre de la base.

Multipliant 14, le périmètre de la base, par 5, la hauteur, on a 70 pieds carrés, la surface latérale.

$(4 + 3) \times 2 = 24$ pieds, la surface des deux bases.

70 pieds carrés la surface latérale + 24 pieds carrés la surface des bases = 94 pieds carrés la surface totale.

$4 \times 3 \times 5 = 60$ pieds cubes, le volume.

LANGUE ANGLAISE

ENGLISH DICTATION AND COMPOSITION

BURIED ALIVE

When the French army was retreating from Moscow, General Ornano, a Corsican, was severely wounded by the bursting of a Russian shell, which killed his horse. He himself was seen lying on his back, to all appearance dead, and blood was flowing from his mouth. A surgeon who happened to be passing, went up to him, felt his pulse, and declared that he was dead. Accordingly his aide-de-camp and a few soldiers began to dig a grave; but the ground was frozen so hard that they could not dig it deep enough, and they had to cover the body partly with snow.

As soon as this was over, the aide-de-camp went to report Ornano's death to Napoleon, who was much grieved when he heard it, for the young general (he was only twenty-six) was a first-rate officer and a great favorite with the Emperor, besides being a Corsican and a distant relation.

The Emperor commanded one of his orderlies to find out all about Ornano's death and how it had happened. The orderly, to make sure, had the body taken up again, and found to his astonishment that it was still warm, and the General alive. He had him covered with warm rugs and taken off to head-quarters. There, after a short time, he was brought back to life, to the great joy of all his friends and acquaintances.

OUTLINE.—1. General Ornano wounded on the retreat from Moscow.

    2. He seems to be dead.

    3. A surgeon declares that life is extinct.

    4. His aide-de-camp and some soldiers try to dig a grave, but the ground is frozen.

    5. They cover the body with snow.

    6. The aide-de-camp reports his death to Napoleon.

    7. The Emperor commands an orderly to find out how Ornano's death happened.

    8. The orderly lifts the body, finds it warm.

    9. He has it taken off to head-quarters.

    10. Ornano is brought back to life.