

CORRIGE – M. QUET

EXERCICE 1 - Calculer chaque expression de deux façons :

1. Application de la priorité aux parenthèses.

$$\begin{aligned} A &= 5 \times (3 + 4) \\ A &= 5 \times 7 \\ A &= 35 \end{aligned}$$

$$\begin{aligned} B &= 6 \times (7 - 4) \\ B &= 6 \times 3 \\ B &= 18 \end{aligned}$$

$$\begin{aligned} C &= (9 + 4) \times 2 \\ C &= 13 \times 2 \\ C &= 26 \end{aligned}$$

$$\begin{aligned} D &= 2,5 (6 - 4) \\ D &= 2,5 \times 2 \\ D &= 5 \end{aligned}$$

$$\begin{aligned} E &= 58 (100 + 2) \\ E &= 58 \times 102 \\ E &= 5\,916 \end{aligned}$$

$$\begin{aligned} F &= 47 (10 - 1) \\ F &= 47 \times 9 \\ F &= 423 \end{aligned}$$

2. Application de la distributivité (développement).

$$\begin{aligned} A &= 5 \times (3 + 4) \\ A &= 5 \times 3 + 5 \times 4 \\ A &= 15 + 20 \\ A &= 35 \end{aligned}$$

$$\begin{aligned} B &= 6 \times (7 - 4) \\ B &= 6 \times 7 - 6 \times 4 \\ B &= 42 - 24 \\ B &= 18 \end{aligned}$$

$$\begin{aligned} C &= (9 + 4) \times 2 \\ C &= 9 \times 2 + 4 \times 2 \\ C &= 18 + 8 \\ C &= 26 \end{aligned}$$

$$\begin{aligned} D &= 2,5 (6 - 4) \\ D &= 2,5 \times 6 - 2,5 \times 4 \\ D &= 15 - 10 \\ D &= 5 \end{aligned}$$

$$\begin{aligned} E &= 58 (100 + 2) \\ E &= 58 \times 100 + 58 \times 2 \\ E &= 5\,800 + 116 \\ E &= 5\,916 \end{aligned}$$

$$\begin{aligned} F &= 47 (10 - 1) \\ F &= 47 \times 10 - 47 \times 1 \\ F &= 470 - 47 \\ F &= 423 \end{aligned}$$

EXERCICE 2 - Calculer chaque expression de deux façons :

1. Application de la priorité aux multiplications.

$$\begin{aligned} A &= 5 \times 6 + 5 \times 8 \\ A &= 30 + 40 \\ A &= 70 \end{aligned}$$

$$\begin{aligned} B &= 6 \times 9 - 6 \times 3 \\ B &= 54 - 18 \\ B &= 36 \end{aligned}$$

$$\begin{aligned} C &= 12 \times 3 + 7 \times 3 \\ C &= 36 + 21 \\ C &= 57 \end{aligned}$$

$$\begin{aligned} D &= 5,5 \times 2 - 2 \times 1,3 \\ D &= 11 - 2,6 \\ D &= 8,4 \end{aligned}$$

$$\begin{aligned} E &= 63 \times 92 + 63 \times 8 \\ E &= 5\,796 + 504 \\ E &= 6\,300 \end{aligned}$$

$$\begin{aligned} F &= 38 \times 107 - 7 \times 38 \\ F &= 4\,066 - 266 \\ F &= 3\,800 \end{aligned}$$

2. Application de la distributivité (factorisation).

$$\begin{aligned} A &= 5 \times 6 + 5 \times 8 \\ A &= 5 \times (6 + 8) \\ A &= 5 \times 14 \\ A &= 70 \end{aligned}$$

$$\begin{aligned} B &= 6 \times 9 - 6 \times 3 \\ B &= 6 \times (9 - 3) \\ B &= 6 \times 6 \\ B &= 36 \end{aligned}$$

$$\begin{aligned} C &= 12 \times 3 + 7 \times 3 \\ C &= 3 \times (12 + 7) \\ C &= 3 \times 19 \\ C &= 57 \end{aligned}$$

$$\begin{aligned} D &= 5,5 \times 2 - 2 \times 1,3 \\ D &= 2 \times (5,5 - 1,3) \\ D &= 2 \times 4,2 \\ D &= 8,4 \end{aligned}$$

$$\begin{aligned} E &= 63 \times 92 + 63 \times 8 \\ E &= 63 \times (92 + 8) \\ E &= 63 \times 100 \\ E &= 6\,300 \end{aligned}$$

$$\begin{aligned} F &= 38 \times 107 - 7 \times 38 \\ F &= 38 \times (107 - 7) \\ F &= 38 \times 100 \\ F &= 3\,800 \end{aligned}$$

EXERCICE 3 - Effectuer astucieusement (et mentalement) ces multiplications par 101 :

$$\begin{aligned} A &= 54 \times 101 \\ A &= 54 (100 + 1) \\ A &= 54 \times 100 + 54 \times 1 \\ A &= 5\,400 + 54 \\ A &= 5\,454 \end{aligned}$$

$$\begin{aligned} B &= 92 \times 101 \\ B &= 92 \times (100 + 1) \\ B &= 92 \times 100 + 92 \times 1 \\ B &= 9\,200 + 92 \\ B &= 9\,292 \end{aligned}$$

$$\begin{aligned} C &= 141 \times 101 \\ C &= 141 \times (100 + 1) \\ C &= 141 \times 100 + 141 \times 1 \\ C &= 14\,100 + 141 \\ C &= 14\,241 \end{aligned}$$

$$\begin{aligned} D &= 4,53 \times 101 \\ D &= 4,53 \times (100 + 1) \\ D &= 4,53 \times 100 + 4,53 \times 1 \\ D &= 453 + 4,53 \\ D &= 457,53 \end{aligned}$$

EXERCICE 4 - Effectuer astucieusement (et mentalement) ces multiplications par 99 :

$$\begin{aligned} A &= 54 \times 99 \\ A &= 54 (100 - 1) \\ A &= 54 \times 100 - 54 \times 1 \\ A &= 5\,400 - 54 \\ A &= 5\,346 \end{aligned}$$

$$\begin{aligned} B &= 92 \times 99 \\ B &= 92 \times (100 - 1) \\ B &= 92 \times 100 - 92 \times 1 \\ B &= 9\,200 - 92 \\ B &= 9\,108 \end{aligned}$$

$$\begin{aligned} C &= 1,4 \times 99 \\ C &= 1,4 \times (100 - 1) \\ C &= 1,4 \times 100 - 1,4 \times 1 \\ C &= 140 - 1,4 \\ C &= 138,6 \end{aligned}$$

$$\begin{aligned} D &= 0,53 \times 99 \\ D &= 0,53 \times (100 - 1) \\ D &= 0,53 \times 100 - 0,53 \times 1 \\ D &= 53 - 0,53 \\ D &= 52,47 \end{aligned}$$

EXERCICE 5 - Utiliser la distributivité pour calculer de façon astucieuse les expressions suivantes :

$$\begin{aligned} A &= 7 \times 5,84 - 7 \times 2,84 \\ A &= 7 \times (5,84 - 2,84) \\ A &= 7 \times 3 \\ A &= 21 \end{aligned}$$

$$\begin{aligned} B &= 84 \times 1,01 \\ B &= 84 \times (1 + 0,01) \\ B &= 84 \times 1 + 84 \times 0,01 \\ B &= 84 + 0,84 \\ B &= 84,84 \end{aligned}$$

$$\begin{aligned} C &= 13 \times 1\,894 + 13 \times 106 \\ C &= 13 (1\,894 + 106) \\ C &= 13 \times 2\,000 \\ C &= 26\,000 \end{aligned}$$

$$\begin{aligned} D &= 138 \times 999 \\ D &= 138 \times (1\,000 - 1) \\ D &= 138 \times 1\,000 - 138 \times 1 \\ D &= 138\,000 - 138 \\ D &= 137\,862 \end{aligned}$$

$$\begin{aligned} E &= 157 \times 8 - 7,99 \times 157 \\ E &= 157 \times (8 - 7,99) \\ E &= 157 \times 0,01 \\ E &= 1,57 \end{aligned}$$