

DISTRIBUTIVITE - ÉQUATIONS

EXERCICE 3B

CORRIGE - M. QUET

EXERCICE 1 - Calculer chaque expression de deux façons :

1. Application de la priorité aux parenthèses.

2. Application de la distributivité (développement).

$A = 5 \times (3 + 4)$ $A = 5 \times 7$ $A = 35$	$B = 6 \times (7 - 4)$ $B = 6 \times 3$ $B = 18$	$A = 5 \times (3 + 4)$ $A = 5 \times 3 + 5 \times 4$ $A = 15 + 20$ $A = 35$	$B = 6 \times (7 - 4)$ $B = 6 \times 7 - 6 \times 4$ $B = 42 - 24$ $B = 18$
$C = (9 + 4) \times 2$ $C = 13 \times 2$ $C = 26$	$D = 2,5 (6 - 4)$ $D = 2,5 \times 2$ $D = 5$	$C = (9 + 4) \times 2$ $C = 9 \times 2 + 4 \times 2$ $C = 18 + 8$ $C = 26$	$D = 2,5 (6 - 4)$ $D = 2,5 \times 6 - 2,5 \times 4$ $D = 15 - 10$ $D = 5$
$E = 58 (100 + 2)$ $E = 58 \times 102$ $E = 5\ 916$	$F = 47 (10 - 1)$ $F = 47 \times 9$ $F = 423$	$E = 58 (100 + 2)$ $E = 58 \times 100 + 58 \times 2$ $E = 5\ 800 + 116$ $E = 5\ 916$	$F = 47 (10 - 1)$ $F = 47 \times 10 - 47 \times 1$ $F = 470 - 47$ $F = 423$

EXERCICE 2 - Calculer chaque expression de deux façons :

1. Application de la priorité aux multiplications.

2. Application de la distributivité (factorisation).

$A = 5 \times 6 + 5 \times 8$ $A = 30 + 40$ $A = 70$	$B = 6 \times 9 - 6 \times 3$ $B = 54 - 18$ $B = 36$	$A = 5 \times 6 + 5 \times 8$ $A = 5 \times (6 + 8)$ $A = 5 \times 14$ $A = 70$	$B = 6 \times 9 - 6 \times 3$ $B = 6 \times (9 - 3)$ $B = 6 \times 6$ $B = 36$
$C = 12 \times 3 + 7 \times 3$ $C = 36 + 21$ $C = 57$	$D = 5,5 \times 2 - 2 \times 1,3$ $D = 11 - 2,6$ $D = 8,4$	$C = 12 \times 3 + 7 \times 3$ $C = 3 \times (12 + 7)$ $C = 3 \times 19$ $C = 57$	$D = 5,5 \times 2 - 2 \times 1,3$ $D = 2 \times (5,5 - 1,3)$ $D = 2 \times 4,2$ $D = 8,4$
$E = 63 \times 92 + 63 \times 8$ $E = 5\ 796 + 504$ $E = 6\ 300$	$F = 38 \times 107 - 7 \times 38$ $F = 4\ 066 - 266$ $F = 3\ 800$	$E = 63 \times 92 + 63 \times 8$ $E = 63 \times (92 + 8)$ $E = 63 \times 100$ $E = 6\ 300$	$F = 38 \times 107 - 7 \times 38$ $F = 38 \times (107 - 7)$ $F = 38 \times 100$ $F = 3\ 800$

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

$A = 54 \times 101$ $A = 54 (100 + 1)$ $A = 54 \times 100 + 54 \times 1$ $A = 5\ 400 + 54$ $A = 5\ 454$	$B = 92 \times 101$ $B = 92 \times (100 + 1)$ $B = 92 \times 100 + 92 \times 1$ $B = 9\ 200 + 92$ $B = 9\ 292$	$C = 141 \times 101$ $C = 141 \times (100 + 1)$ $C = 141 \times 100 + 141 \times 1$ $C = 14\ 100 + 141$ $C = 14\ 241$	$D = 4,53 \times 101$ $D = 4,53 \times (100 + 1)$ $D = 4,53 \times 100 + 4,53 \times 1$ $D = 453 + 4,53$ $D = 457,53$
---------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------

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

$A = 54 \times 99$ $A = 54 (100 - 1)$ $A = 54 \times 100 - 54 \times 1$ $A = 5\ 400 - 54$ $A = 5\ 346$	$B = 92 \times 99$ $B = 92 \times (100 - 1)$ $B = 92 \times 100 - 92 \times 1$ $B = 9\ 200 - 92$ $B = 9\ 108$	$C = 1,4 \times 99$ $C = 1,4 \times (100 - 1)$ $C = 1,4 \times 100 - 1,4 \times 1$ $C = 140 - 1,4$ $C = 138,6$	$D = 0,53 \times 99$ $D = 0,53 \times (100 - 1)$ $D = 0,53 \times 100 - 0,53 \times 1$ $D = 53 - 0,53$ $D = 52,47$
--------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------

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

$A = 7 \times 5,84 - 7 \times 2,84$ $A = 7 \times (5,84 - 2,84)$ $A = 7 \times 3$ $A = 21$	$B = 84 \times 1,01$ $B = 84 \times (1 + 0,01)$ $B = 84 \times 1 + 84 \times 0,01$ $B = 84 + 0,84$ $B = 84,84$	$C = 13 \times 1\ 894 + 13 \times 106$ $C = 13 (1\ 894 + 106)$ $C = 13 \times 2\ 000$ $C = 26\ 000$	$D = 138 \times 999$ $D = 138 \times (1\ 000 - 1)$ $D = 138 \times 1\ 000 - 138 \times 1$ $D = 138\ 000 - 138$ $D = 137\ 862$
-----------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------

$E = 157 \times 8 - 7,99 \times 157$
 $E = 157 \times (8 - 7,99)$
 $E = 157 \times 0,01$
 $E = 1,57$