

EXERCICES Correction - Distributivité numérique

Exercice 1.

a) $A = 36 \times 21 + 36 \times 55.$

b) $B = 81 \times 48 - 81 \times 7.$

c) $C = 85 \times 71 - 7 \times 71.$

d) $D = 32 \times 44 + 91 \times 44.$

e) $E = 12 \times 15 + 0,56 \times 15 + 37 \times 15.$

f) $F = 34,9 \times 13 - 34,9 \times 4,7 + 34,9 \times 65.$

Exercice 2. Plusieurs manières de distribuer sont parfois possibles.

a) $A = 36 \times 21 = 36 \times (20 + 1) = 36 \times 20 + 36 \times 1 = 720 + 36 = 756.$

b) $B = 33 \times 103 = 33 \times (100 + 3) = 33 \times 100 + 33 \times 3 = 3\,300 + 99 = 3\,399.$

c) $C = 39 \times 21 = (40 - 1) \times 21 = 40 \times 21 - 1 \times 21 = 4 \times 10 \times 21 - 21 = 840 - 21 = 819.$

d) $D = 45 \times 10,5 = 45 \times (10 + 0,5) = 45 \times 10 + 45 \times 0,5 = 450 + 22,5 = 472,5.$

e) $E = 98 \times 30 = (100 - 2) \times 30 = 100 \times 30 - 2 \times 30 = 3\,000 - 60 = 2\,940.$

f) $F = 67 \times 120 = 67 \times (100 + 20) = 67 \times 100 + 67 \times 20 = 6\,700 + 1\,340 = 8\,040.$

g) $G = 50,9 \times 40 = (60 - 0,1) \times 40 = 60 \times 40 - 0,1 \times 40 = 2\,400 - 4 = 2\,396.$

h) $H = 20,1 \times 35 = (20 + 0,1) \times 35 = 20 \times 35 + 0,1 \times 35 = 700 + 3,5 = 703,5.$

i) $I = 84 \times 11,25 = 84 \times (11 + 0,25) = 84 \times 11 + 84 \times 0,25 = 84 \times (10 + 1) + 21 = 84 \times 10 + 84 \times 1 + 21 = 945.$

j) $J = 102,2 \times 43 = (100 + 2 + 0,2) \times 43 = 100 \times 43 + 2 \times 43 + 0,2 \times 43 = 4\,300 + 86 + 8,6 = 4\,394,6.$

k) $K = 118,5 \times 23 = (100 + 20 - 2 + 0,5) \times 23 = 100 \times 23 + 20 \times 23 - 2 \times 23 + 0,5 \times 23 = 2\,300 + 460 - 46 + 11,5 = 2\,725,5$

l) $L = 101 \times 52,5 \times 12 = (100 + 1) \times 52,5 \times 12 = 100 \times 52,5 \times 12 + 1 \times 52,5 \times 12 = 52,5 \times 1\,200 + 52,5 \times 12 = 52,5 \times (1\,000 + 200) + 52,5 \times (10 + 2) = 52,5 \times 1\,000 + 52,5 \times 200 + 52,5 \times 10 + 52,5 \times 2 = 52\,500 + 10\,500 + 525 + 105 = 63\,630.$

Exercice 3 : Entourer le facteur commun dans les sommes/différences suivantes puis les factoriser.

a) $A = 83 \times 72 + 83 \times 13 = 83 \times (72 + 13) = 83 \times 85.$

b) $B = 36 \times 13 - 36 \times 5 = 36 \times (13 - 5) = 36 \times 8.$

c) $C = 98 \times 26 + 9 \times 98 = 98 \times (26 + 9) = 98 \times 35.$

d) $D = 16 \times 44 - 6 \times 44 = 44 \times (16 - 6) = 44 \times 10.$

e) $E = 12,7 \times 13 - 4,5 \times 13 = 13 \times (12,7 - 4,5) = 13 \times 8,2.$

f) $F = 19 \times 37 + 37 = 19 \times 37 + 37 \times 1 = 37 \times (19 + 1) = 37 \times 20.$

g) $G = 89 \times 52 - 89 = 89 \times 52 - 89 \times 1 = 89 \times (52 - 1) = 89 \times 51.$

h) $H = 34,5 + 34,5 \times 14 = 34,5 \times 1 + 34,5 \times 14 = 34,5 \times (1 + 14) = 34,5 \times 15.$

i) $I = 12 \times 35 - 10 \times 12 - 12 = 12 \times (35 - 10 + 1) = 12 \times 26.$

j) $J = 37,1 \times 98 - 15 \times 37,1 - 37,1 \times 2 = 37,1 \times (98 - 15 - 2) = 37,1 \times 81$

k) $K = 28 \times 20 + 20 \times 34 + 34 \times 8 = 28 \times 20 + 34 \times (20 + 8) = 28 \times 20 + 34 \times 28 = 28 \times (20 + 34) = 28 \times 54.$

l) $L = 18 \times 35 + 20 \times 75 - 150 = 18 \times 35 + 20 \times 75 - 75 \times 2 = 18 \times 35 + 20 \times 75 - 75 \times 2 = 18 \times 35 + 75(20 - 2) = 18 \times 35 + 75 \times 18 = 18 \times (35 + 75) = 18 \times 110.$

m) $M = 49 + 40 \times 35 + 33 \times 7 = 7 \times 7 + 40 \times 35 + 33 \times 7 = 7 \times 7 + 40 \times 35 + 33 \times 7 = 7(7 + 33) + 40 \times 35 = 7 \times 40 + 40 \times 35 = 40 \times (7 + 35) = 40 \times 42.$

Exercice 4.

a) NON.

b) OUI car $(36 + 1) \times (29 - 1) = 37 \times 28.$

c) NON.

d) OUI car $28 \times (30 + 7) = 28 \times 37.$

e) OUI car $35 \times 28 + 28 \times 2 = 28 \times (35 + 2) = 28 \times 37.$

f) NON.

Exercice 5.

1. C'est le produit de 75 par 111 car $7\,500 + 750 + 75 = 75 \times 100 + 75 \times 10 + 75 \times 1 = 75 \times (100 + 10 + 1) = 75 \times 111.$

2. C'est le produit de 32 et 1 010 car $32\,000 + 320 = 32 \times 1\,000 + 32 \times 10 = 32 \times (1\,000 + 10) = 32 \times 1\,010.$

3. C'est le produit de 43 et 10 101,1 car $430\,000 + 4\,300 + 43 + 4,3 = 43 \times 10\,000 + 43 \times 100 + 43 \times 1 + 43 \times 0,1 = 43 \times (10\,000 + 100 + 1 + 0,1) = 43 \times 10\,101,1.$

Exercice 6.

a) $A = 43 \times 28 = 43 \times (27 + 1) = 43 \times 27 + 43 \times 1 = 1\,161 + 43 = 1\,204.$

b) $B = 43 \times 26 = 43 \times (27 - 1) = 43 \times 27 - 43 \times 1 = 1\,161 - 43 = 1\,118.$

c) $C = 41 \times 27 = (43 - 2) \times 27 = 43 \times 27 - 2 \times 27 = 1\,161 - 54 = 1\,107.$

d) $D = 42 \times 29 = (43 - 1) \times (27 + 2) = (43 - 1) \times 27 + (43 - 1) \times 2 = 43 \times 27 - 1 \times 27 + 43 \times 2 - 1 \times 2 = 1\,161 - 27 + 86 - 2 = 1\,218.$

e) $E = 40 \times 27 + 43 = (43 - 3) \times 27 + 43 = 43 \times 27 - 3 \times 27 + 43 = 1\,161 - 81 + 43 = 1\,123.$