1. Réduction d'e*x*pressions littérales

E*x*ercice 1 6 + 4***x*** + 8*x* + 3*x* + 1 + 5 + 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 8*x* + 7 + 6 + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 6*x* + 2 + 6 + 4*x* + 1 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 3*x* + 4 + 9*x* + 8*x* + 5 + 7 + 7*x* + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 *x* + 7 + 7 + 1 + *x* + 8*x* + 6*x* + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 8*x* + 8*x* + 9 + 10*x* + 1 + 7 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 3 + 10*x* + 7*x* + 9 + 5 + 8*x* + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 5 + 6 + 5*x* + 7 + 7 + 2*x* + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 10*x* + 8 + 3*x* + 9*x* + 4 + 6 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 *x* + *x* + 10 + 7 + 3 + 8 + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 8*x* + 4*x* + 7*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 8 + 7*x* + 4*x* + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 4*x* + 3 + 1 + 8 + 2*x* + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 3 + *x* + 1 + 4*x* + 9*x* + 2 + 9 + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 6 + 2*x* + 9*x* + 10*x* + 10 + 10*x* + 3*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 4 + 10 + 2 + 2 + 2 + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 4*x* + 6 + 1 + 9 + 2 + 6*x* + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 7 + 4*x* + 7*x* + 2 + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 6 + 2 + 4 + *x* + *x* + 8 + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 2 + 5 + 8*x* + 3*x* + 1 + 6 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 6 + 4*x* + 8*x* + 3*x* + 1 + 5 + 10 = 15*x*+22

Solution 2 8*x* + 7 + 6 + 7*x* = 15*x* + 13

Solution 3 6*x* + 2 + 6 + 4*x* + 1 + 9 = 10*x* + 18

Solution 4 3*x* + 4 + 9*x* + 8*x* + 5 + 7 + 7*x* + 5 = 27*x*+21

Solution 5 *x* + 7 + 7 + 1 + *x* + 8*x* + 6*x* + 9 = 16*x*+24

Solution 6 8*x* + 8*x* + 9 + 10*x* + 1 + 7 + 9 = 26*x*+26

Solution 7 3 + 10*x* + 7*x* + 9 + 5 + 8*x* + 7*x* = 32*x*+17

Solution 8 5 + 6 + 5*x* + 7 + 7 + 2*x* + 9*x* = 16*x* + 25

Solution 9 10*x* + 8 + 3*x* + 9*x* + 4 + 6 + 9*x* = 31*x*+18

Solution 10 *x* + *x* + 10 + 7 + 3 + 8 + 5 = 2*x* + 33

Solution 11 8*x* + 4*x* + 7*x* + 2*x* = 21*x*

Solution 12 8 + 7*x* + 4*x* + 5*x* = 16*x* + 8

Solution 13 4*x* + 3 + 1 + 8 + 2*x* + 10*x* = 16*x* + 12

Solution 14 3 + *x* + 1 + 4*x* + 9*x* + 2 + 9 + 5 = 14*x*+20

Solution 15 6 + 2*x* + 9*x* + 10*x* + 10 + 10*x* + 3*x* + 2*x* = 36*x* + 16

Solution 16 4 + 10 + 2 + 2 + 2 + *x* = *x* + 20

Solution 17 4*x* + 6 + 1 + 9 + 2 + 6*x* + 8 = 10*x* + 26

Solution 18 7 + 4*x* + 7*x* + 2 + 3*x* = 14*x* + 9

Solution 19 6 + 2 + 4 + *x* + *x* + 8 + 3*x* = 5*x* + 20

Solution 20 2 + 5 + 8*x* + 3*x* + 1 + 6 = 11*x* + 14

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 7 + 4*x* + 3*x* + 4 + *x* + 2 + 3*x* + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 6*x* + 10 + 2*x* + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 4*x* + 4*x* + 1 + 5 + 5*x* + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 5 + 9 + 3*x* + 5*x* + 6*x* + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 2*x* + 4*x* + 7 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 7*x* + 3 + 2*x* + 6*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 3*x* + 5 + 6 + 3*x* + 8 + 5*x* + 6 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 3*x* + 5 + 7*x* + *x* + 10 + 8 + 3*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 9 + 2*x* + 6*x* + 6 + 6 + 2 + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 9 + *x* + 4*x* + 1 + 9 + 6*x* + 9 + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 1 + 9 + 6 + 5 + 10*x* + 7*x* + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 5*x* + 6 + 2 + 9 + 3*x* + 6*x* + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 8 + 4*x* + 10 + *x* + 10*x* + 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 10 + 4 + 2 + 4*x* + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 3 + 3*x* + 4*x* + 9*x* + 7*x* + 10 + 7*x* + 4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 4*x* + 6*x* + 6*x* + 2 + 9*x* + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 *x* + 5*x* + 3 + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 9*x* + 10 + 10*x* + 10 + 2*x* + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 2 + 4*x* + 7 + 6 + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 7*x* + 1 + 1 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 7 + 4*x* + 3*x* + 4 + *x* + 2 + 3*x* + 8*x* = 19*x* + 13

Solution 2 6*x* + 10 + 2*x* + 4*x* = 12*x* + 10

Solution 3 4*x* + 4*x* + 1 + 5 + 5*x* + 9*x* = 22*x* + 6

Solution 4 5 + 9 + 3*x* + 5*x* + 6*x* + 2 = 14*x* + 16

Solution 5 2*x* + 4*x* + 7 + 9 = 6*x* + 16

Solution 6 7*x* + 3 + 2*x* + 6*x* + 7 = 15*x* + 10

Solution 7 3*x* + 5 + 6 + 3*x* + 8 + 5*x* + 6 = 11*x* + 25

Solution 8 3*x* + 5 + 7*x* + *x* + 10 + 8 + 3*x* + 7 = 14*x* + 30

Solution 9 9 + 2*x* + 6*x* + 6 + 6 + 2 + 2*x* = 10*x* + 23

Solution 10 9 + *x* + 4*x* + 1 + 9 + 6*x* + 9 + 8 = 11*x* + 36

Solution 11 1 + 9 + 6 + 5 + 10*x* + 7*x* + 5*x* = 22*x* + 21

Solution 12 5*x* + 6 + 2 + 9 + 3*x* + 6*x* + 8 = 14*x* + 25

Solution 13 8 + 4*x* + 10 + *x* + 10*x* + 10 = 15*x* + 28

Solution 14 10 + 4 + 2 + 4*x* + 4*x* = 8*x* + 16

Solution 15 3 + 3*x* + 4*x* + 9*x* + 7*x* + 10 + 7*x* + 4 = 30*x* + 17

Solution 16 4*x* + 6*x* + 6*x* + 2 + 9*x* + 5 = 25*x* + 7

Solution 17 *x* + 5*x* + 3 + 2*x* = 8*x* + 3

Solution 18 9*x* + 10 + 10*x* + 10 + 2*x* + *x* = 22*x* + 20

Solution 19 2 + 4*x* + 7 + 6 + *x* = 5*x* + 15

Solution 20 7*x* + 1 + 1 + 4*x* = 11*x* + 2

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 7*x* + 6 + 3 + 2 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 10*x* + 5*x* + 6 + 5 + 6*x* + 10 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 5 + 5*x* + 2*x* + 3 + 7*x* + 5*x* + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 2*x* + 7 + 2 + 4 + 4 + 4*x* + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 1 + 4 + 10 + 3 + 9 + 8*x* + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 8 + 9 + 10 + 8 + 2 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 10*x* + 5 + 9 + 10*x* + 10 + 9 + 7 + 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 *x* + *x* + 2*x* + 3 + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 1 + 10*x* + 5 + 10*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 9 + 4 + 9*x* + 8*x* + 8*x* + 7 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 5*x* + 2*x* + 2*x* + 2 + 4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 7 + 2 + 9*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 7*x* + 9 + 5*x* + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 8*x* + 4 + 2 + 10 + 10*x* + 5 + 7*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 1 + 7*x* + 1 + 5*x* + 5 + 3 + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 *x* + 4*x* + 4 + 9*x* + 3*x* + 6 + 8 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 6 + 6 + 6 + 8*x* + 7 + 8 + 6 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 *x* + 6 + 6 + 7 + 4 + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 8 + 8*x* + 9*x* + 6 + 2*x* + 5 + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 2 + 5*x* + 10*x* + 4 + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 7*x* + 6 + 3 + 2 + 9 = 7*x* + 20

Solution 2 10*x* + 5*x* + 6 + 5 + 6*x* + 10 + 9*x* = 30*x* + 21

Solution 3 5 + 5*x* + 2*x* + 3 + 7*x* + 5*x* + 3*x* = 22*x* + 8

Solution 4 2*x* + 7 + 2 + 4 + 4 + 4*x* + 5 = 6*x* + 22

Solution 5 1 + 4 + 10 + 3 + 9 + 8*x* + 7*x* = 15*x* + 27

Solution 6 8 + 9 + 10 + 8 + 2 + 9 = 46

Solution 7 10*x* + 5 + 9 + 10*x* + 10 + 9 + 7 + 10 = 20*x* + 50

Solution 8 *x* + *x* + 2*x* + 3 + 5*x* = 9*x* + 3

Solution 9 1 + 10*x* + 5 + 10*x* + 2*x* = 22*x* + 6

Solution 10 9 + 4 + 9*x* + 8*x* + 8*x* + 7 + 9*x* = 34*x* + 20 =

Solution 11 5*x* + 2*x* + 2*x* + 2 + 4 = 9*x* + 6

Solution 12 7 + 2 + 9*x* + 7 = 9*x* + 16

Solution 13 7*x* + 9 + 5*x* + *x* = 13*x* + 9

Solution 14 8*x* + 4 + 2 + 10 + 10*x* + 5 + 7*x* + 2*x* = 27*x* + 21

Solution 15 1 + 7*x* + 1 + 5*x* + 5 + 3 + 2*x* = 14*x* + 10

Solution 16 *x* + 4*x* + 4 + 9*x* + 3*x* + 6 + 8 + 9*x* = 26*x* + 18

Solution 17 6 + 6 + 6 + 8*x* + 7 + 8 + 6 = 8*x* + 39

Solution 18 *x* + 6 + 6 + 7 + 4 + 8*x* = 9*x* + 23

Solution 19 8 + 8*x* + 9*x* + 6 + 2*x* + 5 + 5 = 19*x* + 24

Solution 20 2 + 5*x* + 10*x* + 4 + *x* = 16*x* + 6

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 6*x* + 2*x* + 8*x* + 9 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 9*x* + 7*x* + 1 + 5*x* + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 4 + 5 + 3 + 5*x* + 7*x* + *x* + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 3*x* + 6*x* + 3 + 9 + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 *x* + 8*x* + 9*x* + 6*x* + 4*x* + 10*x* + 4*x* + 4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 9 + 3*x* + 9 + 9 + 10 + 6*x* + 3*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 3*x* + 3*x* + 8 + 4*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 *x* + 3*x* + 7*x* + 6 + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 7*x* + 10*x* + 7*x* + 9*x* + 3 + 5 + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 *x* + 8*x* + 5*x* + 5 + 1 + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 5*x* + 7*x* + 5*x* + 4*x* + 1 + 7 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 3*x* + 7 + 2*x* + 2*x* + 6*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 3*x* + 4 + 5*x* + 3*x* + 3*x* + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 1 + 7 + 5 + 1 + 1 + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 7*x* + 10 + 5 + *x* + 6*x* + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 10*x* + 9 + 9 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 5 + 3*x* + 3 + 10*x* + *x* + 9*x* + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 5 + 5*x* + 3 + 4*x* + 6 + 6*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 6 + 8 + 1 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 7*x* + 10 + 9 + 10 + 4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 6*x* + 2*x* + 8*x* + 9 + 9 = 16*x* + 18

Solution 2 9*x* + 7*x* + 1 + 5*x* + 1 = 21*x* + 2

Solution 3 4 + 5 + 3 + 5*x* + 7*x* + *x* + 3 = 13*x* + 15

Solution 4 3*x* + 6*x* + 3 + 9 + 10*x* = 19*x* + 12

Solution 5 *x* + 8*x* + 9*x* + 6*x* + 4*x* + 10*x* + 4*x* + 4 = 42*x* + 4

Solution 6 9 + 3*x* + 9 + 9 + 10 + 6*x* + 3*x* + 7 = 12*x* + 44

Solution 7 3*x* + 3*x* + 8 + 4*x* + 7 = 10*x* + 15

Solution 8 *x* + 3*x* + 7*x* + 6 + 5*x* = 16*x* + 6

Solution 9 7*x* + 10*x* + 7*x* + 9*x* + 3 + 5 + 8 = 33*x* + 16

Solution 10 *x* + 8*x* + 5*x* + 5 + 1 + 10*x* = 24*x* + 6

Solution 11 5*x* + 7*x* + 5*x* + 4*x* + 1 + 7 + 4*x* = 25*x* + 8

Solution 12 3*x* + 7 + 2*x* + 2*x* + 6*x* + 2*x* = 15*x* + 7

Solution 13 3*x* + 4 + 5*x* + 3*x* + 3*x* + 1 = 14*x* + 5

Solution 14 1 + 7 + 5 + 1 + 1 + 1 = 16

Solution 15 7*x* + 10 + 5 + *x* + 6*x* + 9*x* = 23*x* + 15

Solution 16 10*x* + 9 + 9 + 9 = 10*x* + 27

Solution 17 5 + 3*x* + 3 + 10*x* + *x* + 9*x* + 10*x* = 33*x* + 8

Solution 18 5 + 5*x* + 3 + 4*x* + 6 + 6*x* + 7 = 15*x* + 21

Solution 19 6 + 8 + 1 + 4*x* = 4*x* + 15

Solution 20 7*x* + 10 + 9 + 10 + 4 = 7*x* + 33

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 8*x* + 5 + 9 + 10 + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 8 + 3*x* + 5*x* + 10*x* + 6 + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 2*x* + 3*x* + 10*x* + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 10 + 5*x* + 8 + 5 + 5*x* + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 2 + 8 + 2*x* + 6*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 9*x* + 2 + 4*x* + 2*x* + 9*x* + 2*x* + 7*x* + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 2*x* + 9 + 2*x* + 6*x* + 7*x* + 8*x* + 2 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 3 + 6*x* + 3 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 9*x* + 2*x* + 9 + 4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 6 + 2*x* + 6*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 *x* + *x* + 4*x* + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 7 + 2 + *x* + 6*x* + 4 + 5*x* + 2*x* + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 5*x* + 7 + 8*x* + 8*x* + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 10*x* + 10 + 10*x* + 2 + 6*x* + 7 + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 5 + 8*x* + 2*x* + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 5*x* + 3 + 8*x* + 6 + 10 + 3 + 1 + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 10 + 1 + 9 + 8*x* + 10 + 8*x* + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 3 + 2 + 3 + 2*x* + 6 + 2*x* + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 3 + 9*x* + *x* + 2*x* + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 2 + 10*x* + 9 + 7*x* + 4 + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 8*x* + 5 + 9 + 10 + 6*x* = 14*x* + 24

Solution 2 8 + 3*x* + 5*x* + 10*x* + 6 + 3 = 18*x* + 17

Solution 3 2*x* + 3*x* + 10*x* + 7*x* = 22*x*

Solution 4 10 + 5*x* + 8 + 5 + 5*x* + 2 = 10*x* + 25

Solution 5 2 + 8 + 2*x* + 6*x* + 2*x* = 10*x* + 10

Solution 6 9*x* + 2 + 4*x* + 2*x* + 9*x* + 2*x* + 7*x* + 2 = 33*x* + 4

Solution 7 2*x* + 9 + 2*x* + 6*x* + 7*x* + 8*x* + 2 + 9*x* = 34*x* + 11

Solution 8 3 + 6*x* + 3 + 9*x* = 15*x* + 6

Solution 9 9*x* + 2*x* + 9 + 4 = 11*x* + 13

Solution 10 6 + 2*x* + 6*x* + 2*x* = 10*x* + 6

Solution 11 *x* + *x* + 4*x* + 9 = 6*x* + 9

Solution 12 7 + 2 + *x* + 6*x* + 4 + 5*x* + 2*x* + 6*x* = 20*x* + 13

Solution 13 5*x* + 7 + 8*x* + 8*x* + 9*x* = 30*x* + 7

Solution 14 10*x* + 10 + 10*x* + 2 + 6*x* + 7 + 6*x* = 32*x* + 19

Solution 15 5 + 8*x* + 2*x* + 9*x* = 19*x* + 5

Solution 16 5*x* + 3 + 8*x* + 6 + 10 + 3 + 1 + 3*x* = 16*x* + 23

Solution 17 10 + 1 + 9 + 8*x* + 10 + 8*x* + 10*x* = 26*x* + 30

Solution 18 3 + 2 + 3 + 2*x* + 6 + 2*x* + 4*x* = 8*x* + 14

Solution 19 3 + 9*x* + *x* + 2*x* + 2 = 12*x* + 5

Solution 20 2 + 10*x* + 9 + 7*x* + 4 + 6*x* = 23*x* + 15

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 8*x* + 2 + 9*x* + 1 + 3*x* + 8*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 9 + 9*x* + 4 + 2 + 6 + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 6 + 5 + 8*x* + 8 + 5 + 7*x* + 10 + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 1 + 7*x* + 4*x* + 2*x* + 4*x* + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 2 + 2*x* + 10 + 2 + *x* + 7*x* + 2 + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 2 + 3*x* + 10*x* + *x* + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 9 + 8*x* + 3*x* + 9*x* + 8*x* + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 10*x* + 5 + 5*x* + 2*x* + 10*x* + 1 + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 4*x* + 4 + 2 + 6*x* + 8 + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 7*x* + 3*x* + 7 + 10 + 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 10*x* + 3 + 4*x* + 10 + 8*x* + 5*x* + 5*x* + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 2*x* + 2 + 6 + 7*x* + 8*x* + 2*x* + 6 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 *x* + 6*x* + 1 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 2 + 2 + 4*x* + 4 + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 7*x* + 5 + 7*x* + 7 + 2*x* + 4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 10 + 6*x* + 9*x* + 3 + 8*x* + 3 + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 3*x* + 2*x* + 4 + 4 + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 8*x* + 1 + 7 + 8*x* + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 4 + 2*x* + 7*x* + 8 + 4*x* + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 6 + 4*x* + 7*x* + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 8*x* + 2 + 9*x* + 1 + 3*x* + 8*x* + 2*x* = 30*x* + 3

Solution 2 9 + 9*x* + 4 + 2 + 6 + 8*x* = 17*x* + 21

Solution 3 6 + 5 + 8*x* + 8 + 5 + 7*x* + 10 + *x* = 16*x* + 34

Solution 4 1 + 7*x* + 4*x* + 2*x* + 4*x* + 8*x* = 25*x* + 1

Solution 5 2 + 2*x* + 10 + 2 + *x* + 7*x* + 2 + 2 = 10*x* + 18

Solution 6 2 + 3*x* + 10*x* + *x* + *x* = 15*x* + 2

Solution 7 9 + 8*x* + 3*x* + 9*x* + 8*x* + 2 = 28*x* + 11

Solution 8 10*x* + 5 + 5*x* + 2*x* + 10*x* + 1 + 7 = 27*x* + 13

Solution 9 4*x* + 4 + 2 + 6*x* + 8 + 3*x* = 13*x* + 14

Solution 10 7*x* + 3*x* + 7 + 10 + 10 = 10*x* + 27

Solution 11 10*x* + 3 + 4*x* + 10 + 8*x* + 5*x* + 5*x* + 10*x* = 42*x* + 13

Solution 12 2*x* + 2 + 6 + 7*x* + 8*x* + 2*x* + 6 = 19*x* + 14

Solution 13 *x* + 6*x* + 1 + 9*x* = 16*x* + 1

Solution 14 2 + 2 + 4*x* + 4 + 7*x* = 11*x* + 8

Solution 15 7*x* + 5 + 7*x* + 7 + 2*x* + 4 = 16*x* + 16

Solution 16 10 + 6*x* + 9*x* + 3 + 8*x* + 3 + 8*x* = 31*x* + 16

Solution 17 3*x* + 2*x* + 4 + 4 + 2 = 5*x* + 10

Solution 18 8*x* + 1 + 7 + 8*x* + 7*x* = 23*x* + 8

Solution 19 4 + 2*x* + 7*x* + 8 + 4*x* + 8 = 13*x* + 20

Solution 20 6 + 4*x* + 7*x* + 3 = 11*x* + 9

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 5 + *x* + 9 + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 1 + 4*x* + 4*x* + 3*x* + 4*x* + 10*x* + 6 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 9 + 6*x* + 1 + 9 + 10 + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 2*x* + *x* + 10*x* + 5 + 5 + 2*x* + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 4 + 1 + 8 + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 3*x* + 1 + 9 + 1 + 8 + 6 + 5 + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 9*x* + 9 + 4*x* + 9 + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 8*x* + 1 + 8*x* + 1 + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 10 + 6*x* + 9*x* + 10*x* + 8 + 5 + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 5 + 2 + 6 + 3*x* + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 2 + 10*x* + 4 + 3 + 8*x* + 4 + 5 + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 1 + 7 + 10 + 10 + *x* + 8 + 2*x* + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 9*x* + 6 + 6 + 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 10 + 1 + 3 + 9*x* + 5*x* + 5*x* + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 9*x* + *x* + 7*x* + 4 + 5*x* + 2*x* + 2 + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 10 + 1 + 2 + 9*x* + 5 + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 *x* + 2 + 6 + 5 + 8 + 4*x* + 8 + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 3 + 6 + 8 + 3*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 4*x* + 1 + 5 + 4 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 4*x* + 7*x* + 2*x* + 3 + 8 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 5 + *x* + 9 + 10*x* = 11*x* + 14

Solution 2 1 + 4*x* + 4*x* + 3*x* + 4*x* + 10*x* + 6 = 25*x* + 7

Solution 3 9 + 6*x* + 1 + 9 + 10 + 8*x* = 14*x* + 29

Solution 4 2*x* + *x* + 10*x* + 5 + 5 + 2*x* + 8 = 15*x* + 18

Solution 5 4 + 1 + 8 + 7*x* = 7*x* + 13

Solution 6 3*x* + 1 + 9 + 1 + 8 + 6 + 5 + 2*x* = 5*x* + 30

Solution 7 9*x* + 9 + 4*x* + 9 + 2 = 13*x* + 20

Solution 8 8*x* + 1 + 8*x* + 1 + 5 = 16*x* + 7

Solution 9 10 + 6*x* + 9*x* + 10*x* + 8 + 5 + 7*x* = 32*x* + 23

Solution 10 5 + 2 + 6 + 3*x* + *x* = 4*x* + 13

Solution 11 2 + 10*x* + 4 + 3 + 8*x* + 4 + 5 + 2 = 18*x* + 20

Solution 12 1 + 7 + 10 + 10 + *x* + 8 + 2*x* + 4*x* = 7*x* + 36

Solution 13 9*x* + 6 + 6 + 10 = 9*x* + 22

Solution 14 10 + 1 + 3 + 9*x* + 5*x* + 5*x* + 8*x* = 27*x* + 14

Solution 15 9*x* + *x* + 7*x* + 4 + 5*x* + 2*x* + 2 + 5*x* = 29*x* + 6

Solution 16 10 + 1 + 2 + 9*x* + 5 + 2 = 9*x* + 20

Solution 17 *x* + 2 + 6 + 5 + 8 + 4*x* + 8 + 5*x* = 10*x* + 29

Solution 18 3 + 6 + 8 + 3*x* + 7 = 3*x* + 24

Solution 19 4*x* + 1 + 5 + 4 + 9 = 4*x* + 19

Solution 20 4*x* + 7*x* + 2*x* + 3 + 8 + 4*x* = 17*x* + 11

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 6 + 3 + 1 + 10 + 10*x* + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 6*x* + 7 + 7 + 2 + 4 + 7*x* + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 2 + 5 + *x* + 4*x* + 3*x* + 6 + 3*x* + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 5 + 2 + 8 + 9*x* + 5*x* + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 5*x* + 9*x* + 5*x* + 7 + 8*x* + 8 + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 1 + 7 + 7*x* + 2*x* + 1 + 4 + 3*x* + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 9*x* + *x* + 1 + 4 + 10*x* + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 1 + 8 + 10*x* + 10*x* + 10*x* + 4 + 9 + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 3*x* + 4 + 5*x* + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 4*x* + 8 + 9 + 7*x* + 10*x* + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 3 + 8 + 2 + 9 + 3*x* + 5 + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 10 + 2 + 6*x* + 4 + 6*x* + 10*x* + 6 + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 9*x* + 7 + *x* + 3 + 2*x* + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 3*x* + 10 + 4*x* + 7*x* + 2 + *x* + 4*x* + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 5*x* + 7 + 9*x* + 8 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 *x* + 4*x* + 10 + 5 + 7 + *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 9*x* + 8 + 6 + 2 + 6*x* + 6*x* + *x* + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 3 + 8*x* + 2 + 8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 10*x* + 10*x* + 4 + 7*x* + 7*x* + 4 + 3*x* + 4 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 9 + 5*x* + 6*x* + 9*x* + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 6 + 3 + 1 + 10 + 10*x* + 6*x* = 16*x* + 20

Solution 2 6*x* + 7 + 7 + 2 + 4 + 7*x* + 9 = 13*x* + 29

Solution 3 2 + 5 + *x* + 4*x* + 3*x* + 6 + 3*x* + *x* = 12*x* + 13

Solution 4 5 + 2 + 8 + 9*x* + 5*x* + 3 = 14*x* + 18

Solution 5 5*x* + 9*x* + 5*x* + 7 + 8*x* + 8 + 8 = 27*x* + 23

Solution 6 1 + 7 + 7*x* + 2*x* + 1 + 4 + 3*x* + *x* = 13*x* + 13

Solution 7 9*x* + *x* + 1 + 4 + 10*x* + 3*x* = 23*x* + 5

Solution 8 1 + 8 + 10*x* + 10*x* + 10*x* + 4 + 9 + 8 = 30*x* + 30

Solution 9 3*x* + 4 + 5*x* + 7*x* = 15*x* + 4

Solution 10 4*x* + 8 + 9 + 7*x* + 10*x* + 2*x* = 23*x* + 17

Solution 11 3 + 8 + 2 + 9 + 3*x* + 5 + 7*x* = 10*x* + 27

Solution 12 10 + 2 + 6*x* + 4 + 6*x* + 10*x* + 6 + 3*x* = 25*x* + 22

Solution 13 9*x* + 7 + *x* + 3 + 2*x* + 6*x* = 18*x* + 10

Solution 14 3*x* + 10 + 4*x* + 7*x* + 2 + *x* + 4*x* + 3*x* = 22*x* + 12

Solution 15 5*x* + 7 + 9*x* + 8 + 4*x* = 18*x* + 15

Solution 16 *x* + 4*x* + 10 + 5 + 7 + *x* = 6*x* + 22

Solution 17 9*x* + 8 + 6 + 2 + 6*x* + 6*x* + *x* + 1 = 22*x* + 17

Solution 18 3 + 8*x* + 2 + 8 = 8*x* + 13

Solution 19 10*x* + 10*x* + 4 + 7*x* + 7*x* + 4 + 3*x* + 4 = 37*x* + 12

Solution 20 9 + 5*x* + 6*x* + 9*x* + 2 = 20*x* + 11

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 3 + 6 + 1 + 1 + 10*x* + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 9 + 8 + 5 + *x* + 10*x* + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 5 + 10*x* + 10*x* + 3 + 6 + 3*x* + *x* + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 9 + 8*x* + 2*x* + 6*x* + 3 + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 2*x* + 10*x* + 8*x* + 5*x* + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 6 + 5 + 8*x* + 2*x* + 2*x* + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 8 + 2*x* + 9*x* + 9 + 6*x* + 10 + 8*x* + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 8 + *x* + 2 + 1 + 7*x* + 6*x* + 2*x* + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 6*x* + 1 + 9 + 9*x* + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 8 + 5 + 10*x* + 9 + 9*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 7*x* + 4*x* + 4*x* + 7 + 5*x* + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 7 + 5*x* + 9*x* + 5*x* + 8*x* + 10*x* + 10*x* + 6 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 10 + 7 + 2*x* + 4*x* + 8*x* + 7 + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 4*x* + 6 + 4 + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 8 + 10*x* + 7*x* + 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 7 + 2 + 7*x* + 8*x* + 1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 1 + 2 + 9*x* + 5 + 5 + 9 + 2 + 2*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 10 + 6 + 6*x* + 3*x* + 8*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 2*x* + 1 + 3 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 6*x* + 4*x* + 3*x* + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 3 + 6 + 1 + 1 + 10*x* + 9 = 10*x* + 20

Solution 2 9 + 8 + 5 + *x* + 10*x* + 5*x* = 16*x* + 22

Solution 3 5 + 10*x* + 10*x* + 3 + 6 + 3*x* + *x* + 1 = 24*x* + 15

Solution 4 9 + 8*x* + 2*x* + 6*x* + 3 + 1 = 16*x* + 13

Solution 5 2*x* + 10*x* + 8*x* + 5*x* + 6*x* = 31*x*

Solution 6 6 + 5 + 8*x* + 2*x* + 2*x* + 6*x* = 18*x* + 11

Solution 7 8 + 2*x* + 9*x* + 9 + 6*x* + 10 + 8*x* + 3 = 25*x* + 30

Solution 8 8 + *x* + 2 + 1 + 7*x* + 6*x* + 2*x* + 7*x* = 23*x* + 11

Solution 9 6*x* + 1 + 9 + 9*x* + 8*x* = 23*x* + 10

Solution 10 8 + 5 + 10*x* + 9 + 9*x* = 19*x* + 22

Solution 11 7*x* + 4*x* + 4*x* + 7 + 5*x* + 4*x* = 24*x* + 7

Solution 12 7 + 5*x* + 9*x* + 5*x* + 8*x* + 10*x* + 10*x* + 6 = 47*x* + 13

Solution 13 10 + 7 + 2*x* + 4*x* + 8*x* + 7 + 1 = 14*x* + 25

Solution 14 4*x* + 6 + 4 + 7*x* = 11*x* + 10

Solution 15 8 + 10*x* + 7*x* + 10 = 17*x* + 18

Solution 16 7 + 2 + 7*x* + 8*x* + 1 = 15*x* + 10

Solution 17 1 + 2 + 9*x* + 5 + 5 + 9 + 2 + 2*x* = 11*x* + 24

Solution 18 10 + 6 + 6*x* + 3*x* + 8*x* = 17*x* + 16

Solution 19 2*x* + 1 + 3 + 4*x* = 6*x* + 4

Solution 20 6*x* + 4*x* + 3*x* + 3*x* = 16*x*

1. Réduction d'e*x*pressions littérales

E*x*ercice 1 3*x* + 10 + 6 + 10*x* + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 2 8 + 10*x* + 9 + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 3 3 + 2*x* + 2*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 4 10 + 4*x* + 5 + 10*x* + 1 + 4*x* + 2 + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 5 5*x* + 4 + 5*x* + 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 6 9*x* + 3 + 8 + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 7 4 + 8*x* + 8 + 7*x* + 3*x* + 9*x* + 6*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 8 7 + 10*x* + 4 + 9 + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 9 9*x* + *x* + 2*x* + 10*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 10 9 + 5 + 4 + 3*x* + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 11 7 + 2 + 6 + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 12 8*x* + 10*x* + 7*x* + 5*x* + 10*x* + 4 + 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 13 2*x* + 2*x* + 8 + 9 + 5 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 14 5*x* + 9*x* + 5 + 9 + 3 + 5*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 15 5*x* + 5*x* + 2 + 5*x* + 3*x* + 7 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 16 6 + 1 + 6*x* + 6*x* + *x* + 10 + 8*x* + 9 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 17 1 + 3 + 8*x* + 2 + 7 + 3 + 7*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 18 9*x* + 5 + 4 + 10*x* + 2 + 8*x* + 3*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 19 8 + 10 + 3 + 3 + 10 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E*x*ercice 20 6*x* + 10*x* + 10 + 7*x* + 6*x* + 6 + 4*x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solutions

Solution 1 3*x* + 10 + 6 + 10*x* + 10*x* = 23*x* + 16

Solution 2 8 + 10*x* + 9 + 9 = 10*x* + 26

Solution 3 3 + 2*x* + 2*x* + 7 = 4*x* + 10

Solution 4 10 + 4*x* + 5 + 10*x* + 1 + 4*x* + 2 + 3*x* = 21*x* + 18

Solution 5 5*x* + 4 + 5*x* + 10 = 10*x* + 14

Solution 6 9*x* + 3 + 8 + 3 = 9*x* + 14

Solution 7 4 + 8*x* + 8 + 7*x* + 3*x* + 9*x* + 6*x* = 33*x* + 12

Solution 8 7 + 10*x* + 4 + 9 + 7 = 10*x* + 27

Solution 9 9*x* + *x* + 2*x* + 10*x* = 22*x*

Solution 10 9 + 5 + 4 + 3*x* + 3 = 3*x* + 21

Solution 11 7 + 2 + 6 + 7 = 22

Solution 12 8*x* + 10*x* + 7*x* + 5*x* + 10*x* + 4 + 3 = 40*x* + 7

Solution 13 2*x* + 2*x* + 8 + 9 + 5 = 4*x* + 22

Solution 14 5*x* + 9*x* + 5 + 9 + 3 + 5*x* = 19*x* + 17

Solution 15 5*x* + 5*x* + 2 + 5*x* + 3*x* + 7 = 18*x* + 9

Solution 16 6 + 1 + 6*x* + 6*x* + *x* + 10 + 8*x* + 9 = 21*x* + 26

Solution 17 1 + 3 + 8*x* + 2 + 7 + 3 + 7*x* = 15*x* + 16

Solution 18 9*x* + 5 + 4 + 10*x* + 2 + 8*x* + 3*x* = 30*x* + 11

Solution 19 8 + 10 + 3 + 3 + 10 + 4*x* = 4*x* + 34

Solution 20 6*x* + 10*x* + 10 + 7*x* + 6*x* + 6 + 4*x* = 33*x* + 16