

Please, let me know if you find any mistake, thnx

Exercise 1: Multiply the following polynomials and solve the associated equations:

a) $(x+1)(x+5) = x^2 + 6x + 5 \rightarrow x = -1, x = -5$

b) $(x+2)(x-4) = x^2 - 2x - 8 \rightarrow x = -2, x = 4$

c) $(x+5)(x-3) = x^2 + 2x - 15 \rightarrow x = -5, x = 3$

d) $(x-7)(x+1) = x^2 - 6x - 7 \rightarrow x = 7, x = -1$

e) $(x-3)(x-2) = x^2 - 5x + 6 \rightarrow x = 3, x = 2$

f) $(x+2)(x-1) = x^2 + x - 2 \rightarrow x = -2, x = 1$

g) $(x+3)(x-4) = x^2 - x - 12 \rightarrow x = -3, x = 4$

h) $(x+5)(x+7) = x^2 + 12x + 35 \rightarrow x = -5, x = -7$

i) $(x-9)(x-6) = x^2 - 15x + 54 \rightarrow x = 9, x = 6$

j) $(x-1)(x+5) = x^2 + 4x - 5 \rightarrow x = 1, x = -5$

k) $(x+2)(x+9) = x^2 + 11x + 18 \rightarrow x = -2, x = -9$

l) $(x-3)(x-7) = x^2 - 10x + 21 \rightarrow x = 3, x = 7$

m) $(x+6)(x-4) = x^2 + 2x - 24 \rightarrow x = -6, x = 4$

n) $(x-3)(x+3) = x^2 - 9 \rightarrow x = 3, x = -3$

o) $(x-2)(x-8) = x^2 - 10x + 16 \rightarrow x = 2, x = 8$

p) $(x+2)(x-8) = x^2 - 6x - 16 \rightarrow x = -2, x = 8$

q) $(x-2)(x+8) = x^2 + 6x - 16 \rightarrow x = 2, x = -8$

r) $(x+2)(x+8) = x^2 + 10x + 16 \rightarrow x = -2, x = -8$



Exercise 2: Factorize the following polynomials and solve the associated equations:

- a) $x^2 + 2x - 3 = (x+3)(x-1) \rightarrow x = -3, x = 1$
b) $x^2 - 8x - 9 = (x-9)(x+1) \rightarrow x = 9, x = -1$
c) $x^2 + 10x + 25 = (x+5)(x+5) = (x+5)^2 \rightarrow x = -5$ double
d) $x^2 + 9x + 14 = (x+7)(x+2) \rightarrow x = -7, x = -2$
e) $x^2 - 4x + 4 = (x-2)(x-2) = (x-2)^2 \rightarrow x = 2$ double
f) $x^2 - 4x - 5 = (x+1)(x-5) \rightarrow x = -1, x = 5$
g) $x^2 + 2x - 8 = (x+4)(x-2) \rightarrow x = -4, x = 2$
h) $x^2 - 8x + 15 = (x-5)(x-3) \rightarrow x = 5, x = 3$
i) $x^2 - 8x - 9 = (x-9)(x+1) \rightarrow x = 9, x = -1$
j) $x^2 + 14x + 49 = (x+7)(x+7) = (x+7)^2 \rightarrow x = -7$ double
k) $x^2 - 11x + 30 = (x-5)(x-6) \rightarrow x = 5, x = 6$
l) $x^2 - 2x + 1 = (x-1)(x-1) = (x-1)^2 \rightarrow x = 1$ double
m) $x^2 + 2x - 35 = (x+7)(x-5) \rightarrow x = -7, x = 5$
n) $x^2 + 10x + 21 = (x+3)(x+7) \rightarrow x = -3, x = -7$
o) $x^2 + 9x + 18 = (x+3)(x+6) \rightarrow x = -3, x = -6$
p) $x^2 - 3x - 18 = (x-6)(x+3) \rightarrow x = 6, x = -3$
q) $x^2 - 7x - 18 = (x-9)(x+2) \rightarrow x = 9, x = -2$
r) $x^2 + 17x - 18 = (x+18)(x-1) \rightarrow x = -18, x = 1$

