

Worksheet

01/26/2020

Free on dw-math.com

Problem quickname: 1444

1)

Simplify, remove the parentheses by multiplying out and combine like terms.

Quick:
1444

a) $yx + (x + y)(x - y) = yx + (x^2 - y^2) = x^2 + xy - y^2$

b) $x^2 + (x + 8)^2 = x^2 + (x^2 + 16x + 64) = 2x^2 + 16x + 64$

c) $(a + 14)^2 - a^2 = (a^2 + 28a + 196) - a^2 = 28a + 196$

d) $(7 - x)^2 - x^2 = (x^2 - 14x + 49) - x^2 = 49 - 14x$

e) $(13 + x)(13 - x) - x^2 = (169 - x^2) - x^2 = 169 - 2x^2$

f) $x^2 + (y + x)(y - x) = x^2 + (y^2 - x^2) = y^2$

g) $(7 - a)^2 - a^2 = (a^2 - 14a + 49) - a^2 = 49 - 14a$

h) $(a + 15)(a - 15) - 15a = (a^2 - 225) - 15a = a^2 - 15a - 225$

i) $12a + (12 - a)^2 = 12a + (a^2 - 24a + 144) = a^2 - 12a + 144$

j) $(x + y)(x - y) - x^2 = (x^2 - y^2) - x^2 = -y^2$

2)

Simplify, remove the parentheses by multiplying out and combine like terms.

Quick:
1444

a) $(a + b)^2 \cdot 6 = (a^2 + 2ab + b^2) \cdot 6 = 6a^2 + 12ab + 6b^2$

b) $(19 - x)^2 \cdot 4 = (x^2 - 38x + 361) \cdot 4 = 4x^2 - 152x + 1444$

c) $(b - a)^2 \cdot 6 = (a^2 - 2ab + b^2) \cdot 6 = 6a^2 - 12ab + 6b^2$

d) $8(2 + a)^2 = 8(a^2 + 4a + 4) = 8a^2 + 32a + 32$

e) $(x + y)^2 \cdot 9 = (x^2 + 2xy + y^2) \cdot 9 = 9x^2 + 18xy + 9y^2$

f) $(y + x)^2 \cdot 3 = (x^2 + 2xy + y^2) \cdot 3 = 3x^2 + 6xy + 3y^2$

g) $(x - 16)^2 \cdot 8 = (x^2 - 32x + 256) \cdot 8 = 8x^2 - 256x + 2048$

h) $(y + x)^2 \cdot 9 = (x^2 + 2xy + y^2) \cdot 9 = 9x^2 + 18xy + 9y^2$

i) $(b + a)^2 \cdot 8 = (a^2 + 2ab + b^2) \cdot 8 = 8a^2 + 16ab + 8b^2$

j) $(2 - x)^2 \cdot 6 = (x^2 - 4x + 4) \cdot 6 = 6x^2 - 24x + 24$

3)

Simplify, remove the parentheses by multiplying out and combine like terms.

Quick:
1444

a) $ab + (b - a)^2 = ab + (a^2 - 2ab + b^2) = a^2 - ab + b^2$

b) $(x - y)^2 x = (x^2 - 2xy + y^2)x = x^3 - 2x^2y + xy^2$

c) $(b - a)^2 \cdot 4 = (a^2 - 2ab + b^2) \cdot 4 = 4a^2 - 8ab + 4b^2$

d) $(18 + a)^2 - 6 = (a^2 + 36a + 324) - 6 = a^2 + 36a + 318$

e) $(b + a)^2 - 4 = (a^2 + 2ab + b^2) - 4 = a^2 + 2ab + b^2 - 4$

f) $x^2 + (7 + x)^2 = x^2 + (x^2 + 14x + 49) = 2x^2 + 14x + 49$

g) $(a + b)^2 + ba = (a^2 + 2ab + b^2) + ba = a^2 + 3ab + b^2$

h) $9 + (17 + x)^2 = 9 + (x^2 + 34x + 289) = x^2 + 34x + 298$

i) $(a - b)^2 + 4 = (a^2 - 2ab + b^2) + 4 = a^2 - 2ab + b^2 + 4$

j) $(b - a)^2 \cdot 8 = (a^2 - 2ab + b^2) \cdot 8 = 8a^2 - 16ab + 8b^2$

4)

Quick:
1444

Simplify, remove the parentheses by multiplying out and combine like terms. Use the binomic formulas.

a) $(x + y)^2 \cdot 5 = (x^2 + 2xy + y^2) \cdot 5 = 5x^2 + 10xy + 5y^2$

b) $(a + 4)^2 + 2 = (a^2 + 8a + 16) + 2 = a^2 + 8a + 18$

c) $(a + b)^2 + 2 = (a^2 + 2ab + b^2) + 2 = a^2 + 2ab + b^2 + 2$

d) $3 + (x + 9)^2 = 3 + (x^2 + 18x + 81) = x^2 + 18x + 84$

e) $3 + (y + x)^2 = 3 + (x^2 + 2xy + y^2) = x^2 + 2xy + y^2 + 3$

f) $9(b + a)^2 = 9(a^2 + 2ab + b^2) = 9a^2 + 18ab + 9b^2$

g) $7 + (a + 15)^2 = 7 + (a^2 + 30a + 225) = a^2 + 30a + 232$

h) $(b + a)^2 \cdot 8 = (a^2 + 2ab + b^2) \cdot 8 = 8a^2 + 16ab + 8b^2$

i) $3 + (x + 11)^2 = 3 + (x^2 + 22x + 121) = x^2 + 22x + 124$

j) $(b + a)^2 - 7 = (a^2 + 2ab + b^2) - 7 = a^2 + 2ab + b^2 - 7$

Good Luck!