

Worksheet

01/26/2020

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Problem quickname: 1444

1)

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

Quick:
1444

- a) $(x + y)^2 \cdot 8 = (x^2 + 2xy + y^2) \cdot 8 = 8x^2 + 16xy + 8y^2$
 b) $(15 - x)^2 \cdot 5 = (x^2 - 30x + 225) \cdot 5 = 5x^2 - 150x + 1125$
 c) $(y - x)^2 \cdot 7 = (x^2 - 2xy + y^2) \cdot 7 = 7x^2 - 14xy + 7y^2$
 d) $(x + 5)^2 \cdot 5 = (x^2 + 10x + 25) \cdot 5 = 5x^2 + 50x + 125$
 e) $3(3 + x)^2 = 3(x^2 + 6x + 9) = 3x^2 + 18x + 27$
 f) $(x - 18)^2 \cdot 3 = (x^2 - 36x + 324) \cdot 3 = 3x^2 - 108x + 972$
 g) $(a + b)^2 \cdot 2 = (a^2 + 2ab + b^2) \cdot 2 = 2a^2 + 4ab + 2b^2$
 h) $7(y - x)^2 = 7(x^2 - 2xy + y^2) = 7x^2 - 14xy + 7y^2$
 i) $(x - y)^2 \cdot 7 = (x^2 - 2xy + y^2) \cdot 7 = 7x^2 - 14xy + 7y^2$
 j) $8(19 + a)^2 = 8(a^2 + 38a + 361) = 8a^2 + 304a + 2888$

2)

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

Quick:
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- a) $(18 - a)^2 a = (a^2 - 36a + 324)a = a^3 - 36a^2 + 324a$
 b) $(a + b)(a - b) - a^2 = (a^2 - b^2) - a^2 = -b^2$
 c) $a(7 + a)(7 - a) = a(49 - a^2) = 49a - a^3$
 d) $(y + x)^2 + 5 = (x^2 + 2xy + y^2) + 5 = x^2 + 2xy + y^2 + 5$
 e) $(a - 18)^2 - a^2 = (a^2 - 36a + 324) - a^2 = 324 - 36a$
 f) $3(a + b)^2 = 3(a^2 + 2ab + b^2) = 3a^2 + 6ab + 3b^2$
 g) $(9 + x)(9 - x) - 2 = (81 - x^2) - 2 = 79 - x^2$
 h) $(14 - x)^2 - 4 = (x^2 - 28x + 196) - 4 = x^2 - 28x + 192$
 i) $(x - y)^2 - x^2 = (x^2 - 2xy + y^2) - x^2 = y^2 - 2xy$
 j) $a(b - a)^2 = a(a^2 - 2ab + b^2) = a^3 - 2a^2b + ab^2$

3)

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

Quick:
1444

- a) $8 + (a + b)^2 = 8 + (a^2 + 2ab + b^2) = a^2 + 2ab + b^2 + 8$
 b) $7 + (18 + a)^2 = 7 + (a^2 + 36a + 324) = a^2 + 36a + 331$
 c) $4(a + b)^2 = 4(a^2 + 2ab + b^2) = 4a^2 + 8ab + 4b^2$
 d) $(x + y)^2 - 2 = (x^2 + 2xy + y^2) - 2 = x^2 + 2xy + y^2 - 2$

- e) $(a + 15)^2 + 7 = (a^2 + 30a + 225) + 7 = a^2 + 30a + 232$
 f) $(9 + x)^2 + 8 = (x^2 + 18x + 81) + 8 = x^2 + 18x + 89$
 g) $(a + b)^2 \cdot 6 = (a^2 + 2ab + b^2) \cdot 6 = 6a^2 + 12ab + 6b^2$
 h) $(b + a)^2 \cdot 9 = (a^2 + 2ab + b^2) \cdot 9 = 9a^2 + 18ab + 9b^2$
 i) $(a + 11)^2 - 2 = (a^2 + 22a + 121) - 2 = a^2 + 22a + 119$
 j) $9(x + 5)^2 = 9(x^2 + 10x + 25) = 9x^2 + 90x + 225$

4)

Quick:
1444

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

- a) $(x + y)^2 \cdot 4 = (x^2 + 2xy + y^2) \cdot 4 = 4x^2 + 8xy + 4y^2$
 b) $(a + 15)(a - 15)a = (a^2 - 225)a = a^3 - 225a$
 c) $9(a - b)^2 = 9(a^2 - 2ab + b^2) = 9a^2 - 18ab + 9b^2$
 d) $3(a - b)^2 = 3(a^2 - 2ab + b^2) = 3a^2 - 6ab + 3b^2$
 e) $x(y + x)(y - x) = x(y^2 - x^2) = xy^2 - x^3$
 f) $6(x - y)^2 = 6(x^2 - 2xy + y^2) = 6x^2 - 12xy + 6y^2$
 g) $(x - y)^2 \cdot 10 = (x^2 - 2xy + y^2) \cdot 10 = 10x^2 - 20xy + 10y^2$
 h) $(15 + a)^2 a = (a^2 + 30a + 225)a = a^3 + 30a^2 + 225a$
 i) $(8 + a)^2 \cdot 6 = (a^2 + 16a + 64) \cdot 6 = 6a^2 + 96a + 384$
 j) $(a + b)^2 \cdot 2 = (a^2 + 2ab + b^2) \cdot 2 = 2a^2 + 4ab + 2b^2$

Good Luck!