

Worksheet

01/19/2020

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Problem quickname: 1825

1)

There is a binomic formula hidden in this term. Convert the binomic term to the product form.

Quick:
1825

- a) $a^3 + 24a^2 + 144a = (a^2 + 24a + 144)a = (12 + a)^2 a$
 b) $3x^2 + 6xy + 3y^2 = (x^2 + 2xy + y^2) \cdot 3 = (y + x)^2 \cdot 3$
 c) $a^2 + 16a + 70 = (a^2 + 16a + 64) + 6 = (a + 8)^2 + 6$
 d) $x^2 + 2xy + y^2 - 4 = (x^2 + 2xy + y^2) - 4 = (x + y)^2 - 4$
 e) $2a^2 + 8a + 16 = (a^2 + 8a + 16) + a^2 = (a + 4)^2 + a^2$
 f) $a^2 + 38a + 358 = (a^2 + 38a + 361) - 3 = (19 + a)^2 - 3$
 g) $2a^2 + 28a + 196 = a^2 + (a^2 + 28a + 196) = a^2 + (14 + a)^2$
 h) $a^2 + 2ab + b^2 - 2 = (a^2 + 2ab + b^2) - 2 = (b + a)^2 - 2$
 i) $x^2 + 2xy + y^2 + 8 = (x^2 + 2xy + y^2) + 8 = (y + x)^2 + 8$
 j) $a^2 + 30a + 100 = 10a + (a^2 + 20a + 100) = 10a + (10 + a)^2$

2)

There is a binomic formula hidden in this term. Convert the binomic term to the product form.

Quick:
1825

- a) $4x^2 - 8xy + 4y^2 = (x^2 - 2xy + y^2) \cdot 4 = (x - y)^2 \cdot 4$
 b) $a^3 - 8a^2 + 16a = (a^2 - 8a + 16)a = (a - 4)^2 a$
 c) $121 - 22x = (x^2 - 22x + 121) - x^2 = (11 - x)^2 - x^2$
 d) $a^2 - 18a + 88 = 7 + (a^2 - 18a + 81) = 7 + (a - 9)^2$
 e) $2a^2 - 2ab + b^2 = a^2 + (a^2 - 2ab + b^2) = a^2 + (a - b)^2$
 f) $a^2 - 2ab + b^2 + 6 = 6 + (a^2 - 2ab + b^2) = 6 + (a - b)^2$
 g) $a^2 - 18a + 88 = (a^2 - 18a + 81) + 7 = (9 - a)^2 + 7$
 h) $2x^2 - 22x + 121 = (x^2 - 22x + 121) + x^2 = (11 - x)^2 + x^2$
 i) $a^2 - 20a + 107 = 7 + (a^2 - 20a + 100) = 7 + (10 - a)^2$
 j) $a^2 - 22a + 119 = (a^2 - 22a + 121) - 2 = (11 - a)^2 - 2$

3)

There is a binomic formula hidden in this term. Convert the binomic term to the product form.

Quick:
1825

- a) $x^3 - xy^2 = x(x^2 - y^2) = x(x + y)(x - y)$
 b) $19 - a^2 = (16 - a^2) + 3 = (4 + a)(4 - a) + 3$

- c) $14a - a^2 + 196 = 14a + (196 - a^2) = 14a + (14 + a)(14 - a)$
 d) $y^2 - 2x^2 = (y^2 - x^2) - x^2 = (y + x)(y - x) - x^2$
 e) $2x^2 - 196 = (x^2 - 196) + x^2 = (x + 14)(x - 14) + x^2$
 f) $a^2 - b^2 + 10 = (a^2 - b^2) + 10 = (a + b)(a - b) + 10$
 g) $xy - x^2 + y^2 = (y^2 - x^2) + xy = (y + x)(y - x) + xy$
 h) $2a^2 - 100 = (a^2 - 100) + a^2 = (a + 10)(a - 10) + a^2$
 i) $a^2 - 205 = (a^2 - 196) - 9 = (a + 14)(a - 14) - 9$
 j) $x^2 - y^2 + 9 = (x^2 - y^2) + 9 = (x + y)(x - y) + 9$

4)

There is a binomic formula hidden in this term. Convert the binomic term to the product form. You may have to extract summands or factors.

Quick:
1825

- a) $x^2 + 2xy + y^2 + 3 = 3 + (x^2 + 2xy + y^2) = 3 + (y + x)^2$
 b) $4a^2 + 8ab + 4b^2 = 4(a^2 + 2ab + b^2) = 4(b + a)^2$
 c) $144x - x^3 = (144 - x^2)x = (12 + x)(12 - x)x$
 d) $124 - a^2 = (121 - a^2) + 3 = (11 + a)(11 - a) + 3$
 e) $a^2 + 4a + 2 = (a^2 + 4a + 4) - 2 = (2 + a)^2 - 2$
 f) $a^2 + 8a + 25 = 9 + (a^2 + 8a + 16) = 9 + (4 + a)^2$
 g) $a^3 - ab^2 = (a^2 - b^2)a = (a + b)(a - b)a$
 h) $a^3 - 26a^2 + 169a = (a^2 - 26a + 169)a = (13 - a)^2a$
 i) $7x^2 - 14xy + 7y^2 = (x^2 - 2xy + y^2) \cdot 7 = (y - x)^2 \cdot 7$
 j) $x^2 - 45x + 225 = (x^2 - 30x + 225) - 15x = (x - 15)^2 - 15x$

Good Luck!