

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) $2ab + b^2 = (a^2 + 2ab + b^2) - a^2 = (a + b)^2 - a^2$
 b) $a^3 - 225a = (a^2 - 225)a = (a + 15)(a - 15)a$
 c) $648 - 8x^2 = (81 - x^2) \cdot 8 = (9 + x)(9 - x)8$
 d) $3x^2 - 90x + 675 = 3(x^2 - 30x + 225) = 3(x - 15)^2$
 e) $x^3 - 2x^2y + xy^2 = x(x^2 - 2xy + y^2) = x(x - y)^2$
 f) $x^3 + 2x^2y + xy^2 = x(x^2 + 2xy + y^2) = x(x + y)^2$
 g) $2x^2 - 16x + 64 = (x^2 - 16x + 64) + x^2 = (x - 8)^2 + x^2$
 h) $2a^2 + 4ab + 2b^2 = (a^2 + 2ab + b^2) \cdot 2 = (a + b)^2 \cdot 2$
 i) $231 - a^2 = 6 + (225 - a^2) = 6 + (15 + a)(15 - a)$
 j) $x^2 + xy + y^2 = (x^2 + 2xy + y^2) - xy = (y + x)^2 - xy$

2)

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

Quick:
1825

- a) $x^3 - 30x^2 + 225x = x(x^2 - 30x + 225) = x(x - 15)^2$
 b) $a^3 + 32a^2 + 256a = (a^2 + 32a + 256)a = (16 + a)^2a$
 c) $x^3 - 2x^2y + xy^2 = (x^2 - 2xy + y^2)x = (x - y)^2x$
 d) $x^3 - 36x^2 + 324x = (x^2 - 36x + 324)x = (18 - x)^2x$
 e) $a^3 - 2a^2b + ab^2 = (a^2 - 2ab + b^2)a = (b - a)^2a$
 f) $x^3 - 18x^2 + 81x = (x^2 - 18x + 81)x = (9 - x)^2x$
 g) $x^3 - 22x^2 + 121x = x(x^2 - 22x + 121) = x(11 - x)^2$
 h) $a^3 - 9a = a(a^2 - 9) = a(a + 3)(a - 3)$
 i) $x^3 - xy^2 = x(x^2 - y^2) = x(x + y)(x - y)$
 j) $x^3 + 30x^2 + 225x = (x^2 + 30x + 225)x = (15 + x)^2x$

3)

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

Quick:
1825

- a) $x^2 - y^2 + 8 = 8 + (x^2 - y^2) = 8 + (x + y)(x - y)$
 b) $a^2 - 189 = (a^2 - 196) + 7 = (a + 14)(a - 14) + 7$
 c) $x^2 - 2xy + y^2 + 8 = 8 + (x^2 - 2xy + y^2) = 8 + (x - y)^2$

- d) $a^2 + 14a + 54 = (a^2 + 14a + 49) + 5 = (7 + a)^2 + 5$
 e) $x^2 + 22x + 123 = 2 + (x^2 + 22x + 121) = 2 + (x + 11)^2$
 f) $x^2 + 2xy + y^2 + 2 = (x^2 + 2xy + y^2) + 2 = (y + x)^2 + 2$
 g) $x^2 - 2xy + y^2 + 9 = (x^2 - 2xy + y^2) + 9 = (y - x)^2 + 9$
 h) $a^2 - b^2 + 7 = (a^2 - b^2) + 7 = (a + b)(a - b) + 7$
 i) $a^2 + 16a + 70 = (a^2 + 16a + 64) + 6 = (a + 8)^2 + 6$
 j) $a^2 + 2ab + b^2 + 5 = (a^2 + 2ab + b^2) + 5 = (a + b)^2 + 5$

4)

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

Quick:
1825

- a) $38a + 361 = (a^2 + 38a + 361) - a^2 = (a + 19)^2 - a^2$
 b) $2x^2 + 2xy + y^2 = x^2 + (x^2 + 2xy + y^2) = x^2 + (x + y)^2$
 c) $x^2 + 13x + 169 = (x^2 + 26x + 169) - 13x = (13 + x)^2 - 13x$
 d) $x^3 + 16x^2 + 64x = (x^2 + 16x + 64)x = (8 + x)^2x$
 e) $2x^2 + 2xy + y^2 = (x^2 + 2xy + y^2) + x^2 = (x + y)^2 + x^2$
 f) $2x^2 + 26x + 169 = (x^2 + 26x + 169) + x^2 = (13 + x)^2 + x^2$
 g) $9x^2 + 360x + 3600 = (x^2 + 40x + 400) \cdot 9 = (20 + x)^2 \cdot 9$
 h) $a^2 + 10a + 20 = (a^2 + 10a + 25) - 5 = (a + 5)^2 - 5$
 i) $x^3 + 38x^2 + 361x = (x^2 + 38x + 361)x = (19 + x)^2x$
 j) $a^2 + 40a + 407 = (a^2 + 40a + 400) + 7 = (a + 20)^2 + 7$

Good Luck!