

Worksheet

01/19/2020

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Problem quickname: 1825

1)Quick:
1825

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.

- a) $x^3 - 26x^2 + 169x = (x^2 - 26x + 169)x = (x - 13)^2x$
 b) $x^2 - 10x + 20 = (x^2 - 10x + 25) - 5 = (5 - x)^2 - 5$
 c) $10a^2 - 240a + 1440 = 10(a^2 - 24a + 144) = 10(a - 12)^2$
 d) $a^3 - 2a^2b + ab^2 = (a^2 - 2ab + b^2)a = (a - b)^2a$
 e) $x^2 + xy + y^2 = (x^2 + 2xy + y^2) - yx = (x + y)^2 - yx$
 f) $a^3 - 2a^2b + ab^2 = a(a^2 - 2ab + b^2) = a(b - a)^2$
 g) $2x^2 - 2xy + y^2 = (x^2 - 2xy + y^2) + x^2 = (y - x)^2 + x^2$
 h) $a^2 - 10a + 100 = 10a + (a^2 - 20a + 100) = 10a + (10 - a)^2$
 i) $a^2 + 21a + 49 = (a^2 + 14a + 49) + 7a = (7 + a)^2 + 7a$
 j) $a^2 - ab - b^2 = (a^2 - b^2) - ba = (a + b)(a - b) - ba$

2)Quick:
1825

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

- a) $a^2 - ab + b^2 = (a^2 - 2ab + b^2) + ab = (b - a)^2 + ab$
 b) $a^2 - 12a + 144 = 12a + (a^2 - 24a + 144) = 12a + (12 - a)^2$
 c) $2a^2 - 2ab + b^2 = (a^2 - 2ab + b^2) + a^2 = (a - b)^2 + a^2$
 d) $a^2 - b^2 + 8 = 8 + (a^2 - b^2) = 8 + (a + b)(a - b)$
 e) $2a^2 - 12a + 36 = (a^2 - 12a + 36) + a^2 = (6 - a)^2 + a^2$
 f) $y^2 - x^2 - 10 = (y^2 - x^2) - 10 = (y + x)(y - x) - 10$
 g) $a^2 - 2ab + b^2 + 6 = 6 + (a^2 - 2ab + b^2) = 6 + (a - b)^2$
 h) $x^2 - xy - y^2 = (x^2 - y^2) - yx = (x + y)(x - y) - yx$
 i) $a^3 - 14a^2 + 49a = a(a^2 - 14a + 49) = a(7 - a)^2$
 j) $x^2 - y^2 + 9 = (x^2 - y^2) + 9 = (x + y)(x - y) + 9$

3)Quick:
1825

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

- a) $a^3 - 2a^2b + ab^2 = (a^2 - 2ab + b^2)a = (a - b)^2a$
 b) $a^3 + 34a^2 + 289a = (a^2 + 34a + 289)a = (17 + a)^2a$

- c) $a^3 - 30a^2 + 225a = a(a^2 - 30a + 225) = a(15 - a)^2$
 d) $x^3 - xy^2 = (x^2 - y^2)x = (x + y)(x - y)x$
 e) $x^3 - 2x^2y + xy^2 = (x^2 - 2xy + y^2)x = (y - x)^2x$
 f) $a^3 + 28a^2 + 196a = (a^2 + 28a + 196)a = (a + 14)^2a$
 g) $a^3 - 6a^2 + 9a = (a^2 - 6a + 9)a = (a - 3)^2a$
 h) $a^3 + 30a^2 + 225a = a(a^2 + 30a + 225) = a(a + 15)^2$
 i) $a^3 - ab^2 = (a^2 - b^2)a = (a + b)(a - b)a$
 j) $x^3 - 324x = (x^2 - 324)x = (x + 18)(x - 18)x$

4)

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) $x^2 - y^2 + 6 = 6 + (x^2 - y^2) = 6 + (x + y)(x - y)$
 b) $x^2 - 34x + 296 = (x^2 - 34x + 289) + 7 = (x - 17)^2 + 7$
 c) $a^2 - 24a + 147 = (a^2 - 24a + 144) + 3 = (a - 12)^2 + 3$
 d) $a^2 + 2ab + b^2 + 7 = (a^2 + 2ab + b^2) + 7 = (a + b)^2 + 7$
 e) $a^2 - 2ab + b^2 + 8 = (a^2 - 2ab + b^2) + 8 = (a - b)^2 + 8$
 f) $x^2 - 2xy + y^2 + 7 = 7 + (x^2 - 2xy + y^2) = 7 + (x - y)^2$
 g) $a^2 - 2ab + b^2 + 7 = 7 + (a^2 - 2ab + b^2) = 7 + (b - a)^2$
 h) $a^2 - 2ab + b^2 + 8 = (a^2 - 2ab + b^2) + 8 = (b - a)^2 + 8$
 i) $a^2 - 253 = (a^2 - 256) + 3 = (a + 16)(a - 16) + 3$
 j) $b^2 - a^2 + 9 = 9 + (b^2 - a^2) = 9 + (b + a)(b - a)$

Good Luck!