

Name : _____

Factors: Algebraic Identity

MS2

Factorize each expression using algebraic identity.

1) $49y^2 + 4x^2 + 81z^2 - 28xy - 36xz + 126yz$

2) $a^2c^2 + 9b^2c^2 + 6abc^2 + 48bc^2 + 16ac^2 + 64c^2$

3) $4s^2t^2 - 24st^2 + 36t^2 +$

$v + \frac{121}{v^2} - \frac{110u}{v} + 154$

5) $25m^2n + n^3 + 10mn^2$

$5wx^2 + 36x^2 + 24wx + 12x$

7) $81g^2 + 180g + \frac{49}{h^2} +$

$88q - 22p + 121$

9) $9c^2d^2 + 25d^4 - 30cd^3 - 20d^3 + 12cd^2 + 4d^2$

10) $r^2 + 4s^2 + 16t^2 - 4rs - 16st + 8rt$

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Name : _____

Answer key

Factors: Algebraic Identity

MS2

Factorize each expression using algebraic identity.

1) $49y^2 + 4x^2 + 81z^2 - 28xy - 36xz + 126yz$

$(7y - 2x + 9z)^2$

2) $a^2c^2 + 9b^2c^2 + 6abc^2 + 48bc^2 + 16ac^2 + 64c^2$

$c^2(a + 3b + 8)^2$

3) $4s^2t^2 - 24st^2 + 36t^2 +$

$4(st - 3t + 4)^2$

$v + \frac{121}{v^2} - \frac{110u}{v} + 154$

5) $25m^2n + n^3 + 10mn^2$

$n(5m + n - 6)^2$

$5wx^2 + 36x^2 + 24wx + 12x$

7) $81g^2 + 180g + \frac{49}{h^2} +$

$\left(9g + \frac{7}{h} + 10\right)^2$

$88q - 22p + 121$

9) $9c^2d^2 + 25d^4 - 30cd^3 - 20d^3 + 12cd^2 + 4d^2$

$d^2(3c - 5d + 2)^2$

10) $r^2 + 4s^2 + 16t^2 - 4rs - 16st + 8rt$

$(r - 2s + 4t)^2$

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