

Name : _____

Factors: Algebraic Identity

MS1

Factorize each expression using algebraic identity.

1) $4a^2 + b^2 + 4ab + \frac{64}{c^2} + \frac{16b}{c} + \frac{32a}{c}$

2) $rs^2 + 4r^3 - 4r^2s - 36r^2 + 18rs + 81r$

3) $y^2 + 16z^2 + 8yz - 80z$

$h^2 - 70h + 28g + 49$

5) $16u^2 + 64v^2 + 64uv$

$5b^2cd + 24b^2d + 12b^2c + 18b^2$

7) $49p^2 + 9q^2 - 42pq$

$x^2 + 30wx + 110xy + 66wy$

9) $36s^2t^2 + 144t^4 - 144st^3 - 72t^3 + 36st^2 + 9t^2$

10) $4m^2 + 36n^2 + 24mn - 156n - 52m + 169$

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Name : _____

Answer key

MS1

Factors: Algebraic Identity

Factorize each expression using algebraic identity.

1) $4a^2 + b^2 + 4ab + \frac{64}{c^2} + \frac{16b}{c} + \frac{32a}{c}$

$$\left(2a + b + \frac{8}{c}\right)^2$$

2) $rs^2 + 4r^3 - 4r^2s - 36r^2 + 18rs + 81r$

$$r(s - 2r + 9)^2$$

3) $y^2 + 16z^2 + 8yz - 80z$

$$(y + 4z - 10)^2$$

$i - 70h + 28g + 49$

5) $16u^2 + 64v^2 + 64uv -$

$$16\left(u + 2v - \frac{3}{w}\right)^2$$

$b^2cd + 24b^2d + 12b^2c + 18b^2$

7) $49p^2 + 9q^2 - 42pq +$

$$(-7p + 3q + 6)^2$$

$^2 + 30wx + 110xy + 66wy$

9) $36s^2t^2 + 144t^4 - 144st^3 - 72t^3 + 36st^2 + 9t^2$

$$9t^2(2s - 4t + 1)^2$$

10) $4m^2 + 36n^2 + 24mn - 156n - 52m + 169$

$$(2m + 6n - 13)^2$$

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