

Name : _____

Factors: Algebraic Identity

MS3

Factorize each expression using algebraic identity.

1) $b^2 + 36c^2 - 12bc + \frac{49}{d^2} + \frac{14b}{d} - \frac{84c}{d}$

2) $25y^2 + 81z^2 + 90yz - 36z - 20y + 4$

3) $16m^3 + 36mn^2 + 48r$

$\frac{24p}{q} + \frac{88}{q} + 121$

5) $w^2 + 25v^2 + x^2 - 10vw$

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$- 30st^2 - 10rt^2 + 25t^2$

7) $2yz^2 + 18y^3 - 12y^2z -$

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$- 28uv - 32vw + 112uw$

9) $27a^2b^2 + 90ab^2 + 75b^2 + 18ab + 30b + 3$

10) $81g^2 + 144h^2 + 216gh + 144h + 108g + 36$

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Answer key

Factors: Algebraic Identity

MS3

Factorize each expression using algebraic identity.

1) $b^2 + 36c^2 - 12bc + \frac{49}{d^2} + \frac{14b}{d} - \frac{84c}{d}$

$$\left(b - 6c + \frac{7}{d}\right)^2$$

2) $25y^2 + 81z^2 + 90yz - 36z - 20y + 4$

$$(5y + 9z - 2)^2$$

3) $16m^3 + 36mn^2 + 48r$

$$m(4m + 6n + 5)^2$$

$$\frac{24p}{q} + \frac{88}{q} + 121$$

5) $w^2 + 25v^2 + x^2 - 10vw$

$$(w - 5v + x)^2$$

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$$-30st^2 - 10rt^2 + 25t^2$$

7) $2yz^2 + 18y^3 - 12y^2z -$

$$2y(z - 3y + 3)^2$$

$$^2 - 28uv - 32vw + 112uw$$

9) $27a^2b^2 + 90ab^2 + 75b^2 + 18ab + 30b + 3$

$$3(3ab + 5b + 1)^2$$

10) $81g^2 + 144h^2 + 216gh + 144h + 108g + 36$

$$9(3g + 4h + 2)^2$$