

Name : _____

Factors: Algebraic Identities

ES1

Factorize each expression using algebraic identities.

1) $y^2 + 6y + 9$

2) $s^2 + 2 + \frac{1}{s^2}$

3) $c^2 - 2cd + d^2$

4) $u^2v^2 + 4uv + 4$

5) $w^2 - \frac{2w}{x} + \frac{1}{x^2}$

6) $q^2 - 2qr + r^2$

7) $k^2 + 169 + 26k$

8) $\frac{1}{t^2} - \frac{8}{t} + 16$

9) $m^2n^2 - 2mn + 1$

10) $b^2 + 12b + 36$

Name : _____

Answer key

ES1

Factors: Algebraic Identities

Factorize each expression using algebraic identities.

1) $y^2 + 6y + 9$

$(y + 3)^2$

2) $s^2 + 2 + \frac{1}{s^2}$

$\left(s + \frac{1}{s}\right)^2$

3) $c^2 - 2cd + d^2$

$(c - d)^2$

4) $u^2v^2 + 4uv + 4$

$(uv + 2)^2$

5) $w^2 - \frac{2w}{x} + \frac{1}{x^2}$

$\left(w - \frac{1}{x}\right)^2$

6) $q^2 - 2qr + r^2$

$(q - r)^2$

7) $k^2 + 169 + 26k$

$(k + 13)^2$

8) $\frac{1}{t^2} - \frac{8}{t} + 16$

$\left(\frac{1}{t} - 4\right)^2$

9) $m^2n^2 - 2mn + 1$

$(mn - 1)^2$

10) $b^2 + 12b + 36$

$(b + 6)^2$