

Name : \_\_\_\_\_

## Factors: Algebraic Identities

ES1

Factorize each expression using algebraic identities.

1)  $x^2 + 4x + 4$

2)  $u^2 - v^2$

3)  $m^2 + 5m - mn - 5n$

4)  $t^2 + \frac{1}{t^2} + 2$

5)  $1 - \frac{1}{z^2}$

6)  $r^2s^2 - 6rs + 9$

7)  $y^2 + 2yz + z^2$

8)  $a^2 + 5a - 6$

9)  $p^2 - 16$

10)  $\frac{1}{g^2} - h^2$

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## Answer key

ES1

### Factors: Algebraic Identities

Factorize each expression using algebraic identities.

1)  $x^2 + 4x + 4$

**$(x + 2)^2$**

2)  $u^2 - v^2$

**$(u + v)(u - v)$**

3)  $m^2 + 5m - mn - 5n$

**$(m - n)(m + 5)$**

4)  $t^2 + \frac{1}{t^2} + 2$

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

5)  $1 - \frac{1}{z^2}$

**$\left(1 + \frac{1}{z}\right)\left(1 - \frac{1}{z}\right)$**

6)  $r^2s^2 - 6rs + 9$

**$(rs - 3)^2$**

7)  $y^2 + 2yz + z^2$

**$(y + z)^2$**

8)  $a^2 + 5a - 6$

**$(a + 6)(a - 1)$**

9)  $p^2 - 16$

**$(p + 4)(p - 4)$**

10)  $\frac{1}{g^2} - h^2$

**$\left(\frac{1}{g} + h\right)\left(\frac{1}{g} - h\right)$**