

## Check

1. Factor each difference of squares.

a)  $x^2 - 100$

Write 100 as a perfect square:

$$100 = \underline{\hspace{2cm}}$$

$$x^2 - 100$$

$$= \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

$$= (\underline{\hspace{2cm}} + \underline{\hspace{2cm}})(\underline{\hspace{2cm}} - \underline{\hspace{2cm}})$$

b)  $25h^2 - 81$

Write  $25h^2$  and 81 as perfect squares:

$$25h^2 = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}, \text{ or } (\underline{\hspace{2cm}})^2$$

$$81 = \underline{\hspace{2cm}}$$

$$25h^2 - 81 = \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

## Practice

1. Factor each perfect square trinomial.

a)  $r^2 - 18r + 81$

The 2nd term is  $\underline{\hspace{2cm}}$ ,

so the factors of 81 are  $\underline{\hspace{2cm}}$ .

$$r^2 - 18r + 81$$

$$\begin{array}{cc} \uparrow & \uparrow \\ (\underline{\hspace{2cm}})^2 & (\underline{\hspace{2cm}})^2 \end{array}$$

$$\text{So, } r^2 - 18r + 81$$

$$= (\underline{\hspace{2cm}} - \underline{\hspace{2cm}})(\underline{\hspace{2cm}} - \underline{\hspace{2cm}})$$

$$= (\underline{\hspace{2cm}} - \underline{\hspace{2cm}})^2$$

b)  $25b^2 + 40b + 16$

The 2nd term is  $\underline{\hspace{2cm}}$ ,

so the factors of  $\underline{\hspace{2cm}}$  are  $\underline{\hspace{2cm}}$ .

$$25b^2 + 40b + 16$$

$$\begin{array}{cc} \uparrow & \uparrow \\ (\underline{\hspace{2cm}})^2 & (\underline{\hspace{2cm}})^2 \end{array}$$

$$\text{So, } 25b^2 + 40b + 16$$

$$= \underline{\hspace{2cm}}$$

$$= (\underline{\hspace{2cm}})^2$$

2. Factor each difference of squares.

a)  $x^2 - 36$

Write  $\underline{\hspace{2cm}}$  as a perfect square:

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$x^2 - 36 = \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

b)  $9w^2 - 1$

Write  $\underline{\hspace{2cm}}$  and  $\underline{\hspace{2cm}}$  as perfect squares:

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}, \text{ or } (\underline{\hspace{2cm}})^2$$

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$9w^2 - 1 = \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

3. Factor.

a)  $100c^2 - 49$

This is a  $\underline{\hspace{2cm}}$ .

$$100c^2 - 49 = \underline{\hspace{2cm}}$$

b)  $64m^2 - 16m + 1$

This is a  $\underline{\hspace{2cm}}$ .

$$64m^2 - 16m + 1$$

$$\begin{array}{cc} \uparrow & \uparrow \\ (\underline{\hspace{2cm}})^2 & (\underline{\hspace{2cm}})^2 \end{array}$$

$$\text{So, } 64m^2 - 16m + 1$$

$$= \underline{\hspace{2cm}}$$

$$= (\underline{\hspace{2cm}})^2$$