

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 _____,
so the factors of 81 are _____.

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

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

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 _____,
so the factors of _____ are _____.

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

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

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

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

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

2. Factor each difference of squares.

a) $x^2 - 36$

Write _____ 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 _____ and _____ 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 _____.

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

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

This is a _____.

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

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

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

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

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