

Solve using the zero product property.

a.  $(v - 5)(v - 9) = 0$

b.  $(z + 3)(z - 2) = 0$

c.  $(m + 1)(m - 3) = 0$

d.  $(h - 2)(h - 1) = 0$

e.  $(w + 1)(w + 2) = 0$

f.  $(q - 2)(q + 1) = 0$

g.  $(k - 1)(k - 5) = 0$

h.  $(r + 3)(r + 2) = 0$

i.  $(a + 6)(a - 7) = 0$

j.  $(y - 4)(y + 1) = 0$

KEYS

a.  $(v - 5)(v - 9) = 0$

The **Zero Product Property** states that for all real numbers a and b:

$$\text{If } ab = 0, \text{ then } a = 0 \text{ or } b = 0$$

According to the Zero Product Property, if  $(v - 5)(v - 9) = 0$ , then

$$(v - 5) \text{ must be } 0 \text{ or } (v - 9) \text{ must be } 0.$$

Write two equations and solve for v.

$$v - 5 = 0 \quad \text{or} \quad v - 9 = 0$$

$$v = 5$$

$$v = 9$$

The solution is  $v = 5$  or  $v = 9$

---

b.  $(z + 3)(z - 2) = 0$

The **Zero Product Property** states that for all real numbers a and b:

$$\text{If } ab = 0, \text{ then } a = 0 \text{ or } b = 0$$

According to the Zero Product Property, if  $(z + 3)(z - 2) = 0$ , then

$$(z + 3) \text{ must be } 0 \text{ or } (z - 2) \text{ must be } 0.$$

Write two equations and solve for z.

$$z + 3 = 0 \quad \text{or} \quad z - 2 = 0$$

$$z = -3$$

$$z = 2$$

The solution is  $z = -3$  or  $z = 2$

---

c.  $(m + 1)(m - 3) = 0$

The **Zero Product Property** states that for all real numbers a and b:

$$\text{If } ab = 0, \text{ then } a = 0 \text{ or } b = 0$$

According to the Zero Product Property, if  $(m + 1)(m - 3) = 0$ , then

$(m + 1)$  must be 0 or  $(m - 3)$  must be 0.

Write two equations and solve for  $m$ .

$$m + 1 = 0 \quad \text{or} \quad m - 3 = 0$$

$$m = -1 \qquad m = 3$$

The solution is  $m = -1$  or  $m = 3$

---

d.  $(h - 2)(h - 1) = 0$

The **Zero Product Property** states that for all real numbers  $a$  and  $b$ :

$$\text{If } ab = 0, \text{ then } a = 0 \text{ or } b = 0$$

According to the Zero Product Property, if  $(h - 2)(h - 1) = 0$ , then

$(h - 2)$  must be 0 or  $(h - 1)$  must be 0.

Write two equations and solve for  $h$ .

$$h - 2 = 0 \quad \text{or} \quad h - 1 = 0$$

$$h = 2 \qquad h = 1$$

The solution is  $h = 2$  or  $h = 1$

---

e.  $(w + 1)(w + 2) = 0$

The **Zero Product Property** states that for all real numbers  $a$  and  $b$ :

$$\text{If } ab = 0, \text{ then } a = 0 \text{ or } b = 0$$

According to the Zero Product Property, if  $(w + 1)(w + 2) = 0$ , then

$(w + 1)$  must be 0 or  $(w + 2)$  must be 0.

Write two equations and solve for  $w$ .

$$w + 1 = 0 \quad \text{or} \quad w + 2 = 0$$

$$w = -1$$

$$w = -2$$

The solution is  $w = -1$  or  $w = -2$

---

f.  $(q - 2)(q + 1) = 0$

The **Zero Product Property** states that for all real numbers a and b:

$$\text{If } ab = 0, \text{ then } a = 0 \text{ or } b = 0$$

According to the Zero Product Property, if  $(q - 2)(q + 1) = 0$ , then

$$(q - 2) \text{ must be } 0 \text{ or } (q + 1) \text{ must be } 0.$$

Write two equations and solve for q.

$$q - 2 = 0 \quad \text{or} \quad q + 1 = 0$$

$$q = 2$$

$$q = -1$$

The solution is  $q = 2$  or  $q = -1$

---

g.  $(k - 1)(k - 5) = 0$

The **Zero Product Property** states that for all real numbers a and b:

$$\text{If } ab = 0, \text{ then } a = 0 \text{ or } b = 0$$

According to the Zero Product Property, if  $(k - 1)(k - 5) = 0$ , then

$$(k - 1) \text{ must be } 0 \text{ or } (k - 5) \text{ must be } 0.$$

Write two equations and solve for k.

$$k - 1 = 0 \quad \text{or} \quad k - 5 = 0$$

$$k = 1$$

$$k = 5$$

The solution is  $k = 1$  or  $k = 5$

---

h.  $(r + 3)(w + 2) = 0$

The **Zero Product Property** states that for all real numbers a and b:

If  $ab = 0$ , then  $a = 0$  or  $b = 0$

According to the Zero Product Property, if  $(r + 3)(r + 2) = 0$ , then

$(r + 3)$  must be 0 or  $(r + 2)$  must be 0.

Write two equations and solve for  $r$ .

$$r + 3 = 0 \quad \text{or} \quad r + 2 = 0$$

$$r = -3 \quad \quad \quad r = -2$$

The solution is  $r = -3$  or  $r = -2$

---

i.  $(a + 6)(a - 7) = 0$

The **Zero Product Property** states that for all real numbers  $a$  and  $b$ :

If  $ab = 0$ , then  $a = 0$  or  $b = 0$

According to the Zero Product Property, if  $(a + 6)(a - 7) = 0$ , then

$(a + 6)$  must be 0 or  $(a - 7)$  must be 0.

Write two equations and solve for  $a$ .

$$a + 6 = 0 \quad \text{or} \quad a - 7 = 0$$

$$a = -6 \quad \quad \quad a = 7$$

The solution is  $a = -6$  or  $a = 7$

---

j.  $(y - 4)(y + 1) = 0$

The **Zero Product Property** states that for all real numbers  $a$  and  $b$ :

If  $ab = 0$ , then  $a = 0$  or  $b = 0$

According to the Zero Product Property, if  $(y - 4)(y + 1) = 0$ , then

$(y - 4)$  must be 0 or  $(y + 1)$  must be 0.

Write two equations and solve for  $y$ .

$$y - 4 = 0 \quad \text{or} \quad y + 1 = 0$$

$$y = 4 \qquad y = -1$$

The solution is  $y = 4$  or  $y = -1$

---