

Section 8.4: Zero product property, GCF

Solve each equation by using the zero product property.

Set each term equal to zero & solve!

1) $(n-5)(n+3) = 0$

2) $(x-3)(x+1) = 0$

Ex: 3) $(a+3)(a+8) = 0$

$$\begin{array}{l|l} a+3=0 & a+8=0 \\ -3-3 & -8-8 \\ \hline a=-3 & a=-8 \end{array}$$

5) $(3x-8)(x-3) = 0$

4) $m(m+7) = 0$

6) $(3p+1)(8p-3) = 0$

7) $(a-7)(a-3) = 0$

Ex: 8) $(4v+5)(v+7) = 0$

$$\begin{array}{l|l} 4v+5=0 & v+7=0 \\ -5-5 & -1-7 \\ \hline 4v=-5 & v=-7 \\ \frac{4v}{4} = \frac{-5}{4} & \boxed{v=-7} \\ \boxed{v = -\frac{5}{4}} & \end{array}$$

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Solve each equation by using the zero product property.

Set each term equal to zero & solve!

1) $(n-5)(n+3) = 0$

$$\begin{array}{l|l} n-5=0 & n+3=0 \\ +5+5 & -3-3 \\ \hline n=5 & n=-3 \end{array}$$

2) $(x-3)(x+1) = 0$

$$x=3 \text{ or } -1$$

Ex: 3) $(a+3)(a+8) = 0$

$$\begin{array}{l|l} a+3=0 & a+8=0 \\ -3-3 & -8-8 \\ \hline a=-3 & a=-8 \end{array}$$

4) $m(m+7) = 0$

$$m=0 \text{ or } -7$$

5) $(3x-8)(x-3) = 0$

$$x = \frac{8}{3} + 3$$

6) $(3p+1)(8p-3) = 0$

$$p = -\frac{1}{3} + \frac{3}{8}$$

7) $(a-7)(a-3) = 0$

$$a=7 \text{ or } 3$$

Ex: 8) $(4v+5)(v+7) = 0$

$$\begin{array}{l|l} 4v+5=0 & v+7=0 \\ -5-5 & -1-1 \\ \hline 4v=-5 & v=-7 \\ \frac{4}{4} \quad \frac{1}{4} & \\ \hline v=-\frac{5}{4} & \end{array}$$