Name _____ Date _____

# Solving Quadratic Equations - Guided Lesson Explanation

## Explanation#1

The common factor is k

According to the zero product property, if $k(k + 29) = 0$ , then k must be 0 or k + 29 must be 0

$k (k+ 29) = 0$

$k = 0$ $k + 29 = 0$

$k = -29$

The solution is : $k = 0$ or $k = -29$.

## Explanation#2

**Quadratics take on the form: $ax^2 + bx + c = 0$**

The b and c terms are 30 and 125 so we need to find a pair of factors with a product of 125 and sum is 30 and both numbers are positive, both numbers should be positive.

| Factor pair of c = 125 | Sum of factor pairs |
|---|---|
| 1× 125 = 125 | 1 + 125 = 126 |
| **25 × 5 = 125** | **25 + 5 = 30** |

The correct factor pair is 25 and 5.

$(x + 5) (x + 25)$

According to the zero product property, if $(x + 5) (x + 25)= 0$ , then $x + 5$ must be 0 or $x + 25$ must be 0

$x= -5$ $x = -25$

So the answer is $x= -5$ and $x = -25$.

Name _____ Date _____

**Explanation#3**

**Quadratics take on the form: $ax^2 + bx + c = 0$**

The b and c terms are 36 and 128 so we need to find a pair of factors with a product of 128 and sum of 36. Remember that both numbers should be positive.

We work through scenarios to come to a matching criteria.

| Factor pair of c = 128 | Sum of factor pairs |
|---|---|
| 64× 2 = 128 | 64 + 2 = 66 |
| **32 × 4 = 128** | **32 + 4 = 36** |
| 16× 8 = 128 | 16 + 8 = 24 |

$(x+32)(x+4)$

$x+32=0 \quad x+4=0$

$x=-32 \quad x=-4$