

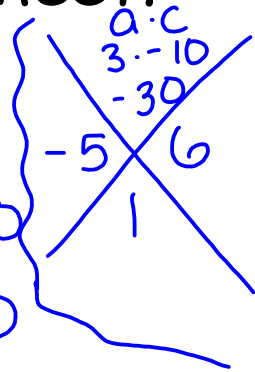
What questions do you have on your "Solving Quadratics by Factoring" worksheet?

(21) $3k^2 + k - 10 = 0$

$(3k^2 + 6k) - (5k - 10) = 0$

$3k(k+2) - 5(k+2) = 0$

$(k+2)(3k-5) = 0$



$3k - 5 = 0$
 $+5 \quad +5$

 $3k = 5$
 $\frac{3k}{3} = \frac{5}{3}$
 $k = \frac{5}{3}$

$k = -2, \frac{5}{3}$

(22) $49r^2 - 63r + 8 = 0$

$(49r^2 - 7r) - (56r + 8) = 0$

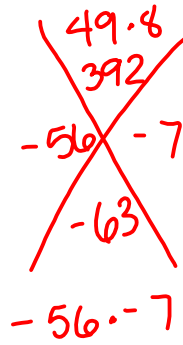
$7r(7r-1) - 8(7r-1) = 0$

$(7r-1)(7r-8) = 0$

$7r-8=0$

$r = \frac{1}{7}, \frac{8}{7}$

$7r-1=0$



$x^2 - 1 = (x+1)(x-1)$

$x^2 - 4 = (x+2)(x-2)$

(20) $49x^2 - 36 = 0$

$(7x+6)(7x-6) = 0$

$x = -\frac{6}{7}, \frac{6}{7}$

49
 \wedge
 $7 \quad 7$

36
 \wedge
 $6 \quad 6$

$7x+6=0$

To complete the square, your quadratic must be in **Standard**

Form, $ax^2 + bx + c = 0$. Here are your steps when $a = 1$:

(1) move c to the right side of the equals sign.

(2) add $(b/2)^2$ to both sides

(3) factor the left side of the equals sign and move c back to the left.

~You will end up in **Vertex Form**, $f(x) = a(x-h)^2+k$, with your vertex at (h,k) .

From your worksheet.

Solve each equation by completing the square.

$$1) \quad p^2 + 20p - 1 = 0$$

$$\begin{array}{r} + 1 + 1 \\ \hline p^2 + 20p + 100 = 1 + 100 \\ p^2 + 20p + 100 = 101 \\ (p+10)^2 = 101 \\ (p+10)^2 - 101 = 0 \end{array}$$

$$\left(\frac{b}{a}\right)^2 \rightarrow \left(\frac{20}{2}\right)^2 = (10)^2 = 100$$

$$7) \quad x^2 - 14x - 34 = 5$$

$$\begin{array}{r} + 34 + 34 \\ \hline x^2 - 14x + 49 = 39 + 49 \\ x^2 - 14x + 49 = 88 \\ (x-7)^2 = 88 \\ (x-7)^2 - 88 = 0 \end{array}$$

$$\left(-\frac{14}{2}\right)^2 = (-7)^2 = 49$$

$$\begin{array}{r} 49 \\ \times \\ -14 \end{array}$$

To complete the square, your quadratic must be in **Standard**

Form, $ax^2 + bx + c = 0$. [There are only a couple of things that change when $a \neq 1$.

~You must factor a out of ~~every~~ *the first 2 terms after moving c to the right.* ~~term.~~

~When you add $(b/2)^2$ to both sides, you must multiply the right side by the a you factored out.

Homework

Solving Quadratics by Completing the Square WKS