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

⑱ $7p^2 + 38p - 24 = 0$

$a = 7$
$b = 38$
$c = -24$

$(7p^2 + 42p) - (7p - 24) = 0$

$a \cdot c$
$7 \cdot -24$
-168

-4×42
38
b

$(7p)(p+6) - 4(p+6) = 0$

$(p+6)(7p-4) = 0$

$p = -6, \frac{4}{7}$

$2 \cdot 84$
$3 \cdot$
$4 \cdot 42$

$p + 6 = 0$

$7p - 4 = 0$
$\underline{+4 \quad +4}$
$\frac{7p}{7} = \frac{4}{7}$
$p = \frac{4}{7}$

⑭ $7n^2 - 6n = 0$

$n(7n - 6) = 0$

$n = \frac{6}{7}, 0$

$n = 0 \qquad 7n - 6 = 0$

⑳ $49x^2 - 36 = 0$

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

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

$\sqrt{49x^2} = \pm 7x$

$\sqrt{36} = \pm 6$

$x^2 - 9 =$
$(x+3)(x-3)$

⑯ $5x^2 - 36x + 7 = 0$

$a = 5$
$b = -36$
$c = 7$

$(5x^2 - 35x) - (x + 7) = 0$

$5x(x - 7) - 1(x - 7) = 0$

$(x - 7)(5x - 1) = 0$

$x = 7, \frac{1}{5}$

$a \cdot c$
35

-1×-35
-36
b

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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).

Apr 5-8:14 AM

From your worksheet.

Solve each equation by completing the square.

$$\left(\frac{b}{2}\right)^2$$

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

$$\underline{\quad\quad +1 \quad\quad +1 \quad\quad}$$

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

$$p^2 + 20p + 100 = 1 + 100$$

$$p^2 + 20p + 100 = 101$$

$$(p + 10)^2 = 101$$

$$(p + 10)^2 - 101 = 0$$

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

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

$$\underline{\quad +34 \quad\quad +34 \quad}$$

$$x^2 - 14x + 49 = 39 + 49$$

$$x^2 - 14x + 49 = 88$$

$$(x-7)(x-7) \rightarrow (x-7)^2 = 88$$

$$(x-7)^2 - 88 = 0$$

Apr 5-8:20 AM

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 term.
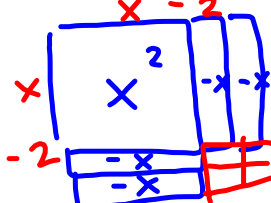
~the first 2 terms after moving c to the right.

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

Solve each equation by completing the square.

$$\left(\frac{b}{2}\right)^2$$

$$\left(\frac{-4}{2}\right)^2 = (-2)^2$$
$$= 4$$

9) $2m^2 - 8m - 10 = 0$

$+10 \quad +10$

$2m^2 - 8m = 10$

$2(m^2 - 4m + 4) = 10 + 8$

$2(m-2)^2 = 18$

$2(m-2)^2 - 18 = 0$

13) $5r^2 - 20r - 73 = -9$

$+73 \quad +73$

$5r^2 - 20r = 64$

$5(r^2 - 4r + 4) = 64 + 20$

$5(r^2 - 4r + 4) = 84$

$5(r-2)^2 = 84$

$5(r-2)^2 - 84 = 0$

$$\left(\frac{b}{2}\right)^2 = \left(\frac{-4}{2}\right)^2 = (-2)^2$$
$$= 4$$

Apr 5-8:22 AM

Homework

Solving Quadratics by Completing the Square WKS