Complete the square

1) $y = x^2 + 6x - 2$

2) $y = 3x^2 + 9x - 5$

3) $y = -x^2 + 4x + 1$

$y = -(x^2 - 4x + 4) + 1$

$-4/2(1)$ $-(x-2)^2 + 1 - 4$

$\frac{b}{2a}$

$y = -(x-2)^2 - 3$

① $y = x^2 + 8x - 1$

$b/2a$ $(-b/2a)^2$

$y = (x^2 + 8x) - 1$

$y = (x + 4)^2 - 1 - 16$

$y = (x+4)^2 - 17$

② $y = 5x^2 + 40x - 7$

$y = 5(x^2 + 8x \quad) - 7$

$y = 5(x+4)^2 - 7 - 16$

$y = 5(x+4)^2 - 23$

What is the value of x?

Must solve by complete the square.

$25 = x^2 + 4x - 6$

$25 = x^2 + 4x - 6$

$-25 \qquad -25$

$0 = x^2 + 4x - 31$

$0 = (x + 4x \,(+4)) - 31 - 4$

$2 \cdot 2 \quad 1/2 = (-2)^2$

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

$+35 \qquad +35$

$\pm\sqrt{35} = \sqrt{(x+2)^2}$

$\pm\sqrt{35} = x + 2$

$-2 \qquad -2$

$-2 \pm \sqrt{35} = x$

$\pm\sqrt{35} - 2 = x$

$25 = x^2 + 4x - 6$

$25 - (x+2)^2 - 6 - 4$

-10

$35 = (x+2)^2$

$$10 = 4x^2 - 16x + 5$$

$$10 = 4(x^2 - 4x) + 5$$

$$10 = 4(x-2)^2 + 5 - 4$$

$$10 = 4(x-2)^2 + 1$$

$$-1 \qquad\qquad -1$$

$$9 = 4(x-2)^2$$

27) $y = 3x^2 + 9x - 5$

$y = 3(x^2 + 3x + \frac{9}{4}) - 5 - 9/4$

$-3/2(1)$

$(-3/2)^2$

$* \; b/2a$

$y = 3(x + 3/2)^2 - \frac{11}{4}$

$5/1 \cdot \frac{4}{4} = 20/4$

$20/4 - 9/4$

1) $y = x^2 + 6x - 2$

copy mistake

$y = (x^2 + 6x + 9) - 2 - 9$

$-b/2a$

$y = (x+3)(x+3) - 11$

$y = (x+3)^2 - 11$

$b/2a$