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Geometry

Completing the Square

Complete the square for the following quadratic equations

1. $x^2+6x=2$

$(\frac{6}{2})^2=9$

$x^2+6x+\boxed{9}=2+\boxed{9}$

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

$(x+3)^2=11$

2. $x^2-8x+3=0$

$-3\ \ -3$

$x^2-8x=-3$

$x^2-8x+\boxed{16}=-3+\boxed{16}$

$(x-4)(x-4)=13$

$(x-4)^2=13$

$(\frac{-8}{2})^2=16$

3. $x^2+4x-6=0$

$+6\ \ +6$

$(\frac{4}{2})^2=4$

$x^2+4x=6$

$x^2+4x+\boxed{4}=6+\boxed{4}$

$(x+2)(x+2)=10$

$(x+2)^2=10$

4. $x^2-2x=5$

$x^2-2x+\boxed{1}=5+\boxed{1}$

$(x-1)(x-1)=6$

$(x-1)^2=6$

$(\frac{-2}{2})^2=1$

5. $x^2-10x=3$

$(\frac{-10}{2})^2=25$

$x^2-10x+\boxed{25}=3+\boxed{25}$

$(x-5)(x-5)=28$

$(x-5)^2=28$

6. $x^2+4x+1=0$

$-1\ \ -1$

$x^2+4x=-1$

$x^2+4x+\boxed{4}=-1+\boxed{4}$

$(x+2)(x+2)=3$

$(x+2)^2=3$

$(\frac{4}{2})^2=4$

7. $x^2+12x=5$

$(\frac{12}{2})^2=36$

$x^2+12x+\boxed{36}=5+\boxed{36}$

$(x+6)(x+6)=41$

$(x+6)^2=41$

8. $x^2-16x+10=0$

$-10\ \ -10$

$x^2-16x=-10$

$x^2-16x+\boxed{64}=-10+\boxed{64}$

$(x-8)(x-8)=54$

$(x-8)^2=54$

$(\frac{-16}{2})^2=64$