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| **Fill in the Blanks** | **Harder Completing the Square** $(ax^{2}+bx+c)$ |

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| --- | --- | --- | --- | --- |
| **Quadratic Expression** | **Take out** **Common Factor** | **Complete the Square** | **Multiply by Common Factor** | **Completed Square** |
| $$2x^{2}+16x$$ | $$2[x^{2}+8x]$$ | $$2[\left(x+4\right)^{2}-16]$$ | $$2(x+4)^{2}-32$$ | $$2(x+4)^{2}-32$$ |
| $$3x^{2}-18x$$ | $$3[x^{2}-6x]$$ |  |  |  |
| $$2x^{2}+12x+1$$ | $$2\left[x^{2}+6x\right]+1$$ | $$2\left[\left(x+3\right)^{2}-9\right]+1$$ | $$2(x+3)^{2}-18+1$$ | $$2(x+3)^{2}-17$$ |
| $$2x^{2}-20x-7$$ | $$2\left[x^{2}-10x\right]-7$$ | $$2\left[\left(x-5\right)^{2}-25\right]-7$$ |  |  |
| $$3x^{2}+6x-5$$ | $$3\left[x^{2}+2x\right]-5$$ |  |  |  |
| $$4x^{2}+16x-1$$ |  |  |  |  |
| $$5x^{2}-30x+11$$ |  |  |  |  |
| $$2x^{2}-10x+3$$ | $$2\left[x^{2}-5x\right]+3$$ | $$2\left[\left(x-\frac{5}{2}\right)^{2}-\frac{25}{4}\right]+3$$ | $$2\left(x-\frac{5}{2}\right)^{2}-\frac{25}{2}+3$$ | $$2\left(x-\frac{5}{2}\right)^{2}-\frac{19}{2}$$ |
| $$2x^{2}+6x-1$$ |  |  |  |  |
| $$3x^{2}-9x+2$$ |  |  |  |  |