## Lesson 13: Constants in Quadratic Equations

* Let’s explore the constants in Quadratic Equations

### 13.1: Math Talk: Halved and Squared

For each value of $b$, mentally find $\left(\frac{b}{2}\right)^{2}$.

$b=6$

$b=\frac{1}{2}$

$b=\frac{2}{5}$

$b=0.8$

### 13.2: Solving Quadratics with Perfect Squares

Solve each of these equations for all values of $x$ that make the equation true.

1. $(x+2)^{2}=9$
2. $(x−\frac{1}{2})^{2}=4$
3. $(x+1)^{2}=8+1$
4. $(x−\frac{1}{3})^{2}=\frac{10}{9}−\frac{1}{9}$
5. $(x−6)(x−6)=81$

### 13.3: Make It a Perfect Square

For each expression:

* Find a value that could be added as a constant term to make each expression a perfect square.
* Add the value you found and rewrite the expression in factored form.
1. $x^{2}+20x$
2. $x^{2}−4x$
3. $x^{2}−2x$
4. $x^{2}+x$
5. $x^{2}+5x$
6. $x^{2}+1.4x$



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