## Unit 7 Lesson 13: Constants in Quadratic Equations

### 1 Math Talk: Halved and Squared (Warm up)

#### Student Task Statement

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

$b=6$

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

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

$b=0.8$

### 2 Solving Quadratics with Perfect Squares

#### Student Task Statement

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. $(x−6)(x−6)=81$

### 3 Make It a Perfect Square

#### Student Task Statement

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. $x^{2}+1.4x$



© CC BY 2019 by Illustrative Mathematics®