## Unit 7 Lesson 3: Solving Quadratic Equations by Reasoning

### 1 How Many Solutions? (Warm up)

#### Student Task Statement

How many solutions does each equation have? What are the solution(s)? Be prepared to explain how you know.

1. $x^{2}=9$
2. $x^{2}=0$
3. $x^{2}−1=3$
4. $2x^{2}=50$
5. $\left(x+1\right)\left(x+1\right)=0$
6. $x\left(x−6\right)=0$
7. $\left(x−1\right)\left(x−1\right)=4$

### 2 Finding Pairs of Solutions

#### Student Task Statement

Each of these equations has two solutions. What are they? Explain or show your reasoning.

1. $n^{2}+4=404$
2. $432=3n^{2}$
3. $144=\left(n+1\right)^{2}$
4. $\left(n−5\right)^{2}−30=70$



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