Simplify the following expressions.

1. $\sqrt{180}$
2. $4 \sqrt{7}+6 \sqrt{7}$
3. $21 \sqrt{5}-6 \sqrt{5}$
4) $3 \sqrt{12} \cdot \sqrt{6}$
5. $\frac{\sqrt{81}}{\sqrt{100}}$
6. $\frac{4}{\sqrt{5}}$

Find the unknown side length. Write your answer in simplest radical form.
7.

8.

9.

10.


Find the value(s) of the variable(s).
11.

12.

13.

14.


