

## 9.2 Simplifying Radicals

### Properties of Square Roots

Chart for Perfect Squares

$1^2$	$2^2$	$3^2$	$4^2$	$5^2$	$6^2$	$7^2$	$8^2$	$9^2$	$10^2$	$11^2$	$12^2$	$13^2$	$14^2$

### Removing Perfect Square Factors

Simplify the following.

1.  $\sqrt{18}$

2.  $\sqrt{81}$

3.  $7\sqrt{12}$

4.  $\sqrt{19}$

5.  $2\sqrt{108}$

6.  $\sqrt{507}$

7.  $\sqrt{\frac{75}{4}}$

8.  $\sqrt{\frac{288}{9}}$

9.  $\sqrt{\frac{45}{100}}$

## Removing Variable Factors

Simplify the following.

10.  $\sqrt{27n^3}$

11.  $\sqrt{x^2y^5}$

12.  $\sqrt{8x^7}$

13.  $\sqrt{49x^2y^3}$

14.  $\sqrt{18a^6b^4}$

15.  $\sqrt{\frac{9a^{15}}{64b^8}}$

16.  $\frac{2+\sqrt{8}}{2}$

17.  $\frac{8+\sqrt{20a}}{2}$

18.  $\frac{9-\sqrt{27x}}{6}$

Perfect Cubes

1	2	3	4	5	6

19.  $\sqrt[3]{54x^3}$

20.  $\sqrt[3]{40x^6y^4}$

21.  $\sqrt[3]{125x^8y^9}$

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