

**CLASS EXAMPLES: Simplifying Radicals / Quadratics by Square Rooting****Simplify.**

1)  $\sqrt{18}$

2)  $\sqrt{200}$

3)  $\sqrt{512}$

4)  $\sqrt{28x^3}$

5)  $\sqrt{252x^4}$

6)  $\sqrt{28p^4}$

7)  $\sqrt{\frac{5}{3}}$

8)  $\frac{\sqrt{6}}{\sqrt{15}}$

9)  $\sqrt{\frac{4}{3}}$

10)  $\frac{\sqrt{12}}{\sqrt{20}}$

**Solve each equation by taking square roots.**

11)  $x^2 = 77$

12)  $n^2 = 63$

13)  $-7p^2 = -189$

14)  $a^2 - 8 = 86$

15)  $16b^2 - 2 = 47$

16)  $5n^2 + 9 = 444$

17)  $9a^2 - 10 = 54$

18)  $7v^2 + 4 = 494$

## CLASS EXAMPLES: Simplifying Radicals / Quadratics by Square Rooting

**Simplify.**

1)  $\sqrt{18}$

$3\sqrt{2}$

2)  $\sqrt{200}$

$10\sqrt{2}$

3)  $\sqrt{512}$

$16\sqrt{2}$

4)  $\sqrt{28x^3}$

$2x\sqrt{7x}$

5)  $\sqrt{252x^4}$

$6x^2\sqrt{7}$

6)  $\sqrt{28p^4}$

$2p^2\sqrt{7}$

7)  $\sqrt{\frac{5}{3}}$

$\frac{\sqrt{15}}{3}$

8)  $\frac{\sqrt{6}}{\sqrt{15}}$

$\frac{\sqrt{10}}{5}$

9)  $\sqrt{\frac{4}{3}}$

$\frac{2\sqrt{3}}{3}$

10)  $\frac{\sqrt{12}}{\sqrt{20}}$

$\frac{\sqrt{15}}{5}$

**Solve each equation by taking square roots.**

11)  $x^2 = 77$

$\{\sqrt{77}, -\sqrt{77}\}$

12)  $n^2 = 63$

$\{3\sqrt{7}, -3\sqrt{7}\}$

13)  $-7p^2 = -189$

$\{3\sqrt{3}, -3\sqrt{3}\}$

14)  $a^2 - 8 = 86$

$\{\sqrt{94}, -\sqrt{94}\}$

15)  $16b^2 - 2 = 47$

$\left\{\frac{7}{4}, -\frac{7}{4}\right\}$

16)  $5n^2 + 9 = 444$

$\{\sqrt{87}, -\sqrt{87}\}$

17)  $9a^2 - 10 = 54$

$\left\{\frac{8}{3}, -\frac{8}{3}\right\}$

18)  $7v^2 + 4 = 494$

$\{\sqrt{70}, -\sqrt{70}\}$