

Name \_\_\_\_\_

Date \_\_\_\_\_

8A; Algebra 1

Period \_\_\_\_\_

### Rationalizing Denominators with Radicals

I. A fractional radicand is considered simplified, or **rationalized**, when there is no radical in the denominator.

II. To simplify a fraction that has a radical in the denominator, (to rationalize) multiply the numerator and the denominator by the radical you want to eliminate. Then simplify the numerator and fraction as needed.

\*\* You can only simplify "like terms" (constant or  $\sqrt{\quad}$ )

For example:

$$1) \frac{3}{\sqrt{7}} = \frac{3}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{3\sqrt{7}}{\sqrt{49}} = \frac{3\sqrt{7}}{7}$$

$$2) \frac{7}{3\sqrt{2}} = \frac{7}{3\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{7\sqrt{2}}{3\sqrt{4}} = \frac{7\sqrt{2}}{3 \cdot 2} = \frac{7\sqrt{2}}{6}$$

Now you try!!!

1) $\frac{7}{\sqrt{11}}$	2) $\frac{5}{2\sqrt{3}}$	3) $\frac{-7}{4\sqrt{2}}$
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4) $\frac{5}{\sqrt{10}}$	5) $\frac{15}{\sqrt{6}}$	6) $\frac{20}{\sqrt{5}}$
7) $\frac{-4}{\sqrt{14}}$	8) $\frac{19}{\sqrt{19}}$	9) $\frac{6}{\sqrt{18}}$
10) $\frac{7}{\sqrt{45}}$	11) $\frac{5\sqrt{2}}{\sqrt{8}}$	12) $\frac{5\sqrt{5}}{3\sqrt{2}}$
13) $\frac{4\sqrt{6}}{2\sqrt{27}}$	14) $\frac{3\sqrt{15}}{2\sqrt{80}}$	15) $\frac{5\sqrt{2}}{\sqrt{32}}$

16) $\frac{3\sqrt{20}}{3\sqrt{12}}$	17) $\frac{5\sqrt{4}}{\sqrt{3}}$	18) $\frac{6\sqrt{2}}{2\sqrt{7}}$
19) $\frac{7\sqrt{3}}{\sqrt{48}}$	20) $\frac{10\sqrt{5}}{4\sqrt{15}}$	21) $\frac{4\sqrt{5}}{\sqrt{8}}$
22) $\frac{\sqrt{7}}{\sqrt{12}}$	23) $\sqrt{\frac{1}{3}}$	24) $\sqrt{\frac{4}{5}}$
25) $\sqrt{5\frac{1}{4}}$	26) $\sqrt{3\frac{2}{5}}$	27) $\frac{3^2}{\sqrt{80}}$