Honors Geometry
Summer Prep

Dividing Radicals!

Rules for Radicals

1. Radicals must be simplified. (No perfect squares left under the radical $\sqrt{\ }$)
2. No fractions under the radical $\sqrt{\ }$
3. No $\sqrt{\ }$ in the denominator of the fraction. Rationalize the denominator!!!!

How do we get rid of the radical in the denominator?

Now let's divide those radicals!

Simplify.

1. $\frac{\sqrt{5}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{15}}{\sqrt{9}} = \boxed{\frac{\sqrt{15}}{3}}$

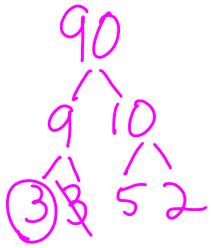
2. $\frac{\sqrt{7}}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \boxed{\frac{\sqrt{42}}{6}}$

3. $\sqrt{\frac{21}{7}} = \boxed{\sqrt{3}}$

4. $\sqrt{\frac{18}{5}} = \frac{\sqrt{18}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}}$
$= \frac{\sqrt{90}}{5} = \boxed{\frac{3\sqrt{10}}{5}}$

5. $\frac{6\sqrt{10}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{6\sqrt{30}}{3}$
$= 2\sqrt{30}$

6. $\frac{11}{\sqrt{22}} \cdot \frac{\sqrt{22}}{\sqrt{22}}$
$= \frac{11\sqrt{22}}{22} = \boxed{\frac{\sqrt{22}}{2}}$



7. $\frac{\sqrt{35}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{\frac{\sqrt{70}}{2}}$

8. $\frac{12\sqrt{51}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} =$

$\boxed{\frac{12\sqrt{357}}{7}}$

9. $\frac{16\sqrt{21}}{\sqrt{6}} = 16\sqrt{\frac{21}{6}}$

$= 16\sqrt{\frac{7}{2}} = \frac{16\sqrt{7}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$\frac{16\sqrt{14}}{2} = \boxed{8\sqrt{14}}$

10. $\frac{35\sqrt{7}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{35\sqrt{35}}{5}$

$= \boxed{7\sqrt{35}}$

11. $\frac{3\sqrt{5}}{\sqrt{5}} = 3$

12. $\frac{4\sqrt{6}}{\sqrt{3}} = 4\sqrt{\frac{6}{3}}$

$= \boxed{4\sqrt{2}}$