SIMPLIFYING RADICALS - Rationalizing the Denominator

For a number to be in **SIMPLEST RADICAL FORM**, two requirements must be met:

1. The radicand must have no perfect square factors, cubed factors, 4^{th} roots, etc. (except the factor 1).
2. There must be no radicals in the denominator.

Let's write $\frac{3}{\sqrt{2}}$ in simplest radical form.

Multiply $\frac{3}{\sqrt{2}}$ by the denominator over itself, $\frac{\sqrt{2}}{\sqrt{2}}$. ← Identity Property of Multiplication

$$\frac{3}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{3\sqrt{2}}{\sqrt{4}} = \frac{3\sqrt{2}}{2}$$

*Make sure to that all radicals are simplified in the final answer.

$\frac{3}{\sqrt{2}}$ in simplest radical form is $\frac{3\sqrt{2}}{2}$.

Let's try: Write the following numbers in simplest radical form.

1. $\frac{2}{\sqrt{3}}$
2. $\frac{3}{\sqrt{5}}$
3. $-\frac{5}{\sqrt{2}}$
4. $\frac{\sqrt{3}}{\sqrt{2}}$
5. $-\frac{3}{\sqrt{3}}$
6. $\frac{\sqrt{2}}{\sqrt{10}}$
7. $\frac{\sqrt{3}}{\sqrt{6}}$
8. $\frac{\sqrt{2}}{\sqrt{6}}$
9. $-\frac{\sqrt{20}}{\sqrt{45}}$

13. $\frac{2}{\sqrt{5}}$

14. $\frac{\sqrt{2}}{\sqrt{7}}$

15. $-\frac{4}{\sqrt{5}}$

16. $\frac{10}{\sqrt{4}}$

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

18. $\frac{3}{\sqrt{12}}$

19. $-\frac{5}{\sqrt{5}}$

20. $\frac{2}{\sqrt{24}}$

21. $\frac{\sqrt{2}}{\sqrt{128}}$