6.5 Operations with Radical Expressions – Day 2 Notes

So what do we do when multiplying radicals containing a coefficient?

$$X\sqrt[n]{a} * Y\sqrt[n]{b} = X * Y\sqrt[n]{ab}$$

ex. $5\sqrt{2x} * 3\sqrt{8x}$

1. $4\sqrt{5a^5} * \sqrt{125a^3}$

ex. $3\sqrt{5y} * 8\sqrt{10yz}$

2. $5\sqrt{x^8y^3} * 5\sqrt{2x^5y^4}$

3. $4\sqrt[3]{3xy} * 2\sqrt[3]{9x^2y^2}$

4. $\sqrt[4]{3x^3y^2} * \sqrt[4]{27xy^2}$

Quotient Property of Radicals: $\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}$

Ex. $\frac{\sqrt{27}}{\sqrt{3}} =$

5. $\frac{\sqrt[3]{81}}{\sqrt[3]{3}} =$

Ex. $\sqrt{\frac{25}{36}r^2t}$ =

6. $\sqrt{\frac{1}{64}c^4d^7}$ =

Rationalizing denominators: **Ex.** $\frac{2}{\sqrt{3}}$ =

ex. $\sqrt[3]{\frac{24}{216}}$ =

7. $\sqrt[4]{\frac{6}{2x}}$ =

ex. = $\sqrt[3]{\frac{8}{54}}$

8. $\sqrt[3]{\frac{4}{5y}}$