

## Math 12 – Workshop #17

---

1. Multiply the following and simplify as much as possible

(a)  $(2\sqrt{10})(5\sqrt{6})$

(b)  $(\sqrt[3]{2b^2})(\sqrt[3]{4b^5})$

(c)  $(\sqrt{2x} + \sqrt{3y})(\sqrt{2x} - \sqrt{3y})$

(d)  $(\sqrt[3]{x} - \sqrt[3]{y})(\sqrt[3]{x^2} + \sqrt[3]{xy} + \sqrt[3]{y^2})$

2. Rationalize the denominator

$$\frac{2x}{\sqrt{3y^3z}}$$

3. Consider the following multiplication. What is the smallest positive value of  $n$  which would rationalize the denominator?

$$\frac{x \sqrt[3]{y^n}}{\sqrt[3]{y} \sqrt[3]{y^n}}$$

4. Rationalize the denominator and simplify

$$\frac{x - 3}{\sqrt{7x + 4} - 5}$$

5. Rationalize the numerator and simplify

$$\frac{\sqrt{2x - 1} - 3}{x - 5}$$

6. Simplify the following expression

$$\frac{\left(\frac{4}{\sqrt{1-x}} - 1\right) \cdot \sqrt{1-x}}{x + 15}$$

7. Complete the multiplication and simplify

$$\left(\frac{\sqrt{x+1}+2}{\sqrt{x+1}+2}\right) \cdot \left[\left(\frac{\sqrt{x+1}-2}{\sqrt{x-2}-1}\right) \cdot \left(\frac{\sqrt{x-2}+1}{\sqrt{x-2}+1}\right)\right]$$