

1-6C Assignment  
Rational Exponents

1)  $5^{\frac{1}{2}} \cdot 5^{\frac{3}{2}} = 5^{\frac{4}{2}} = 25$

2)  $(3^{\frac{2}{3}})^{\frac{3}{2}} = 3^{\frac{2}{3} \cdot \frac{3}{2}} = 3^1 = 3$

3)  $\frac{12^{\frac{3}{4}}}{12^{\frac{1}{4}}} = 12^{\frac{3}{4} - \frac{1}{4}} = 12^{\frac{2}{4}} = 12^{\frac{1}{2}}$

4)  $7^{-\frac{3}{4}} = \frac{1}{7^{\frac{3}{4}}}$

5)  $\frac{9^{\frac{3}{5}}}{9^{\frac{2}{5}}} = 9^{\frac{3}{5} - \frac{2}{5}} = 9^{\frac{1}{5}}$

6)  $\left(\frac{5}{4}\right)^{\frac{1}{6}} = \frac{5^{\frac{1}{6}}}{4^{\frac{1}{6}}}$

7)  $\sqrt{5} \cdot \sqrt{2} = \sqrt{10}$

8)  $\sqrt[3]{14} \cdot \sqrt[3]{196} = \sqrt[3]{14^3} = 14$

9)  $\frac{\sqrt{27}}{\sqrt{3}} = \sqrt{\frac{27}{3}} = \sqrt{9}$

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10)  $\sqrt{\frac{4}{9}} = \frac{2}{3}$

11)  $\sqrt[4]{5} \cdot \sqrt[4]{2000} = \sqrt[4]{10000} = 10$

12)  $\frac{\sqrt{10} \cdot \sqrt{21}}{\sqrt{15}} = \sqrt{\frac{210 \cdot 21}{15}} = \sqrt{14}$

13)  $x^{\frac{1}{3}} \cdot x^{\frac{4}{3}} = x^{\frac{5}{3}}$

14)  $(x^{\frac{2}{5}})^2 = x^{\frac{4}{5}} \cdot 2 = x^{\frac{4}{5}}$

15)  $(x^{\frac{3}{2}})^{\frac{1}{2}} = x^{\frac{3}{2} \cdot \frac{1}{2}} = x^{\frac{3}{4}}$

16)  $(8x)^{\frac{1}{3}} = 8^{\frac{1}{3}} x^{\frac{1}{3}} = 2x^{\frac{1}{3}}$

17)  $x^{-\frac{4}{3}} = \frac{1}{x^{\frac{4}{3}}}$

18)  $(x^{\frac{5}{6}})^{-3} = (x^{\frac{5}{6} \cdot 3})^{-1} = (x^{\frac{5}{2}})^{-1} = \frac{1}{x^{\frac{5}{2}}}$

19)  $\frac{x^{\frac{5}{6}}}{x^{\frac{1}{6}}} = x^{\frac{5}{6} - \frac{1}{6}} = x^{\frac{4}{6}} = x^{\frac{2}{3}}$

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Alg II Quiz Review

09/07/2017

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$$20) \frac{x^{\frac{2}{3}}}{x^{\frac{5}{3}}} = x^{\frac{2}{3} - \frac{5}{3}} = x^{-\frac{3}{3}} = x^{-1} = \frac{1}{x}$$

$$21) \left(\frac{x}{64}\right)^{\frac{2}{3}} = \frac{x^{\frac{2}{3}}}{64^{\frac{2}{3}}} = \frac{x^{\frac{2}{3}}}{4^2} = \frac{x^{\frac{2}{3}}}{16}$$