Algebra 2 // Topic 5 "Review Worksheet A"

1 $\left(\frac{-2}{5}\right)^{-2} =$

$= \frac{(-2)^{-2}}{5^{-2}} = \frac{5^2}{(-2)^2}$

$= \boxed{\frac{25}{4}}$

2 $\left(\frac{2}{3}\right)^{-3} =$

$= \frac{2^{-3}}{3^{-3}} = \frac{3^3}{2^3}$

$= \boxed{\frac{27}{8}}$

3 $49^{-1/2} =$

$= \frac{1}{49^{1/2}} = \frac{1}{\sqrt{49}}$

$= \boxed{\frac{1}{7}}$

4 $64^{-1/3} =$

$= \frac{1}{64^{1/3}} = \frac{1}{\sqrt[3]{64}}$

$= \boxed{\frac{1}{4}}$

5 $8^{4/3} =$

$= \sqrt[3]{8^4} = 2^4$

$= \boxed{16}$

6 $25^{3/2} =$

$= \sqrt[2]{25^3} = 5^3$

$= \boxed{125}$

7 $\frac{9^{1/3}}{9^{-1/2}} =$

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

$= 9^{\frac{2}{6}+\frac{3}{6}} = \boxed{9^{5/6}}$

8 $\frac{5^{2/3}}{5^{1/4}} =$

$= 5^{\frac{2}{3}-\frac{1}{4}} = 5^{\frac{8}{12}-\frac{3}{12}}$

$\boxed{5^{5/12}}$

9 $2^{\frac{1}{4}} \cdot 2^{\frac{4}{3}} =$

$= 2^{\frac{1}{4}+\frac{4}{3}} = 2^{\frac{3}{12}+\frac{16}{12}}$

$\boxed{2^{19/12}}$

10 $10^{4/5} \cdot 10^{-1/2} =$

$= 10^{\frac{4}{5}+\frac{-1}{2}} = 10^{\frac{8}{10}-\frac{5}{10}}$

$\boxed{10^{3/10}}$

11 $\left(3^{1/7} \cdot 3^{3/7}\right)^7 =$

$= 3^1 \cdot 3^3 = 3^4$

$\boxed{81}$

12 $\left(8^{7/4} \cdot 8^{-2/4}\right)^9 =$

$= 8^7 \cdot 8^{-2}$

$\boxed{8^5}$

13 $\frac{1}{n^{-3}} = \boxed{n^3}$

14 $\frac{1}{x^{-4}} = \boxed{x^4}$

15 $(-27)^{2/3} =$

$= \sqrt[3]{(-27)^2} = (-3)^2$

$\boxed{9}$

16 $(-8)^{2/3} =$

$= \sqrt[3]{(-8)^2} = (-2)^2$

$\boxed{4}$

17 $\left(15^{\frac{1}{2}}\right)^{\frac{3}{4}}$

$\boxed{15^{3/8}}$

18 $\left(20^{\frac{2}{3}}\right)^{\frac{3}{8}}$

$= 20^{6/24} = \boxed{20^{1/4}}$

19 $\sqrt{40}$

$\sqrt{4}\sqrt{10}$

$\boxed{2\sqrt{10}}$

20 $5\sqrt{24}$

$5\sqrt{4}\sqrt{6}$

$5 \cdot 2\sqrt{6}$

$\boxed{10\sqrt{6}}$