Algebra 2 Bellwork Friday, February 19, 2016

Simplify each. Simplify means NO decimals in your answer!

1. $(-27)^{-\frac{2}{3}}$

2. $7^{\frac{5}{3}}$

3. $4^{-\frac{5}{2}}$

4. $\left(\frac{49x^{16}}{121y^{-12}}\right)^{\frac{1}{2}}$

5. $\left(\frac{6w^{8}x^{-7}}{24w^{-2}x^{3}}\right)^{-\frac{3}{2}}$

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Answers

Simplify each. Simplify means NO decimals in your answer!

1. $(-27)^{-\frac{2}{3}}$

$\frac{1}{\left(\sqrt[3]{-27}\right)^2} = \frac{1}{(-3)^2} = \boxed{\frac{1}{9}}$

2. $7^{\frac{5}{3}}$

$= \sqrt[3]{7^5}$

$= \sqrt[3]{7^3 \cdot 7^2}$

$= \boxed{7\sqrt[3]{7^2} \text{ or } 7\sqrt[3]{49}}$

3. $4^{-\frac{5}{2}}$

$= \frac{1}{(\sqrt{4})^5} = \frac{1}{2^5}$

$= \boxed{\frac{1}{32}}$

4. $\left(\frac{49x^{16}}{121y^{-12}}\right)^{\frac{1}{2}}$

$\sqrt{\frac{49x^{16}y^{12}}{121}}$

$= \boxed{\frac{7x^8y^6}{11}}$

5. $\left(\frac{6w^{8}x^{-7}}{24w^{-2}x^{3}}\right)^{-\frac{3}{2}}$

$= \left(\frac{w^{10}}{4x^{10}}\right)^{-3/2}$

$= \left(\frac{4x^{10}}{w^{10}}\right)^{3/2}$

$= \frac{(\sqrt{4})^3 x^{10 \cdot 3/2}}{w^{10 \cdot 3/2}}$

$= \boxed{\frac{8x^{15}}{w^{15}}}$