

HW #8 Review for P.2 Test

Name: _____

Rewrite in scientific notation

1. -4,321,000,000

$$-4.321 \times 10^9$$

2. 0.0007914

$$7.914 \times 10^{-4}$$

Rewrite in decimal notation

3. 5.72×10^{-4}

$$0.000572$$

4. 8.234×10^7

$$82,340,000$$

Evaluate without a calculator

5. $36^{\frac{3}{2}}$

$$\begin{aligned} & (\sqrt{36})^3 \\ & = 6^3 = \boxed{216} \end{aligned}$$

6. $\sqrt[3]{64}$

$$4$$

7. $\left(\frac{4}{25}\right)^{\frac{1}{2}}$

$$\left(\frac{25}{4}\right)^{\frac{1}{2}} = \sqrt{\frac{25}{4}} = \frac{5}{2}$$

Completely simplify with no negative exponents

8. $(3x^2y^3)^2(2x^{-3}y)$

$$\begin{aligned} & (9x^4y^6)(2x^{-3}y) \\ & = \boxed{18xy^7} \end{aligned}$$

9. $\frac{4m^3n^0p^2}{(3mn^2p^{-2})^2}$

$$\begin{aligned} & \frac{4m^3n^0p^2}{9m^2n^4p^{-4}} \\ & = \boxed{\frac{4mp^6}{9n^4}} \end{aligned}$$

10. $5d^3(2d^2f^4)^3$

$$\begin{aligned} & 5d^3(8d^6f^{12}) \\ & = 40d^9f^{12} \end{aligned}$$

Completely simplify showing all work

11. $\sqrt{32x^5}$

$$\begin{aligned} & \sqrt{16} \sqrt{2} \\ & 4x^2 \sqrt{2x} \end{aligned}$$

12. $3\sqrt{18} - 5\sqrt{50}$

$$\begin{aligned} & \sqrt{9} \sqrt{2} - \sqrt{25} \sqrt{2} \\ & 9\sqrt{2} - 25\sqrt{2} \\ & = -16\sqrt{2} \end{aligned}$$

13. $\sqrt[3]{16m^5n^6p^2}$

$$\begin{aligned} & \sqrt[3]{8} \sqrt[3]{2} \\ & 2mn^2(\sqrt[3]{2m^2p^2}) \end{aligned}$$

14. $5\sqrt{20} + 7\sqrt{45}$

$$\begin{aligned} & \sqrt{4} \sqrt{5} + \sqrt{9} \sqrt{5} \\ & 10\sqrt{5} + 21\sqrt{5} \\ & = 31\sqrt{5} \end{aligned}$$

15. $\sqrt[4]{32p^5r^3}$

$$\begin{aligned} & 2p \sqrt[4]{2pr^3} \end{aligned}$$

$\begin{matrix} 32 \\ \wedge \\ 8 \\ \wedge \\ 4 \\ \wedge \\ 2 \end{matrix}$

16. $4x\sqrt{12x^3y} \rightarrow \sqrt{4} \sqrt{3}$

$$2x\sqrt{3xy}$$

Rationalize and simplify

17. $\frac{2}{\sqrt{5}} \left(\frac{\sqrt{5}}{\sqrt{5}}\right)$

$$\frac{2\sqrt{5}}{5}$$

18. $\frac{3}{2\sqrt{6}} \left(\frac{\sqrt{6}}{\sqrt{6}}\right)$

$$\frac{3\sqrt{6}}{2(6)} = \frac{3\sqrt{6}}{12} = \frac{\sqrt{6}}{4}$$

19. $\frac{5\sqrt{2}}{6\sqrt{6}} \left(\frac{\sqrt{6}}{\sqrt{6}}\right)$

$$\frac{5\sqrt{12}}{36} = \frac{10\sqrt{3}}{36} = \frac{5\sqrt{3}}{18}$$