

Answer Key to Homework

(you must show all work)

Evaluate each expression

1. 32^0 1
2. $(2 \cdot 3)^2$ 36
3. $(-217)^1$ -217
4. $(\frac{1}{5})^{-2}$ 25
5. $32^{\frac{1}{5}}$ 2
6. $64^{\frac{5}{6}}$ 32
7. $-(15^{-1})$ $-\frac{1}{15}$
8. $(-3^4 3^5)^0$ 1
9. $(\frac{3}{5})^2$ $\frac{9}{25}$
10. $(\frac{1}{2})^{-5}$ 32
11. $(\frac{1}{2})^{-4}$ 16
12. $-27^{\frac{2}{3}}$ -9

Simplify each expression, assuming that no variable equals zero.
Write your answer with positive exponents.

13. $d^3 d^{-4}$ $\frac{1}{d}$
14. $w^3 y^4 z \cdot w y^{-2} z$ $w^4 y^2 z^2$
15. $k^{-11} k^3$ $\frac{1}{k^8}$
16. $(x^7)^2$ x^{14}
17. $\frac{z^{15}}{z^{-2}}$ z^{17}
18. $(\frac{1}{x^{-7}})^{-5}$ $\frac{1}{x^{35}}$
19. $\frac{y^{14} z^5}{y^9 z^4}$ $y^5 z$
20. $\frac{16^{21} 16^{-12}}{16^9}$ 1
21. $(3x^3 y^5)^4$ $81x^{12} y^{20}$
22. $(-2a^3 b c^6)^4$ $16a^{12} b^4 c^{24}$
23. $(5a^2 b^3)^3$ $125a^6 b^9$
24. $(\frac{w^4}{x^2})^{-2}$ $\frac{x^4}{w^8}$
25. $(\frac{a^{-2}}{b^{-3}})^{-2}$ $\frac{a^4}{b^6}$
26. $(\frac{w^6}{k})^3$ $\frac{w^{18}}{k^3}$
27. $(\frac{m^{-2} p^2}{2mp^3})^{-4}$ $16m^{12} p^4$
28. $(\frac{xy^3 z^2}{z^{-1}})^{-1}$ $\frac{1}{xy^3 z^4}$
29. $[\frac{(x^2 y^2)^3}{x^5}]^{-1}$ $\frac{1}{x^4 y^6}$
30. $(\frac{3x}{y})^4 [\frac{x^{-8}}{(xy)^3}]^{-2}$ $81x^{26} y^2$