ANSWERS ON REVERSE

NEGATIVE EXPONENTS

WS6

I. Evaluate each expression.

1. $2^{-3} \cdot 2^{5}$
2. $5^{4} \cdot 5^{-6}$
3. 8^{-2}
4. $6^{0} \cdot 3^{-4}$
5. $3^{0} \cdot 5^{2}$
6. $\left(8 \cdot 2^{4}\right)^{0}$
7. $\dfrac{10^{0}}{10^{-2}}$
8. $\left(\dfrac{1}{2}\right)^{-3}$
9. $\dfrac{10^{-2} \cdot 10^{3}}{10^{4}}$
10. $\dfrac{5^{0} \cdot 5^{3}}{5^{-2}}$
11. $(2^{-4})^{2}$
12. $(3^{3})^{-1}$
13. $(-10)^{-3}$
14. $(-3)^{-4}$
15. $(-11)^{-2}$
16. $(-2)^{-3}$

II. Simplify the following expressions. Write answers using only <u>positive</u> exponents.

17. a^{-3}
18. $\dfrac{1}{x^{-2}}$
19. $\dfrac{1}{s^{-3}}$
20. $x^{0}y^{-4}$
21. $r^{-2}st^{-4}$
22. $8^{0}x^{3}y^{-3}$
23. $h^{-3}k^{5}$
24. $3x^{-1}$
25. $\dfrac{x}{y^{-3}}$
26. $(x^{-2})^{2}$
27. $\dfrac{a^{-2}}{b}$
28. $(y^{4})^{-2}$
29. $mn^{0}p^{-4}$
30. $(y^{-4})^{0}$
31. $y^{-7} \cdot y^{9}$
32. $x^{-8} \cdot x^{4}$
33. $(n^{4})^{-1}$
34. $x^{-8} \cdot y^{4}$
35. $p^{2}p^{0}p^{-3}$
36. $\left(\dfrac{s}{t}\right)^{-6}$
37. $(z^{-3})^{2}$
38. $\dfrac{x^{0}}{y^{-4}}$
39. $\dfrac{y^{-1}}{y^{4}}$
40. $\dfrac{x^{-2}}{y^{-3}}$

NEGATIVE EXPONENTS

ANSWERS

WS6

I. Evaluate each expression.

1. $2^{-3} \cdot 2^5$ — $2^2 \Rightarrow 4$
2. $5^4 \cdot 5^{-6}$ — $5^{-2} \Rightarrow \frac{1}{5^2} \Rightarrow \frac{1}{25}$
3. 8^{-2} — $\frac{1}{8^2} \Rightarrow \frac{1}{64}$
4. $6^0 \cdot 3^{-4}$ — $\frac{1}{3^4} \Rightarrow \frac{1}{81}$
5. $3^0 \cdot 5^2$ — $5^2 \Rightarrow 25$
6. $\left(8 \cdot 2^4\right)^0$ — $\Rightarrow 1$
7. $\frac{10^0}{10^{-2}}$ — $10^2 \Rightarrow 100$
8. $\left(\frac{1}{2}\right)^{-3}$ — $2^3 \Rightarrow 8$
9. $\frac{10^{-2} \cdot 10^3}{10^4}$
10. $\frac{5^0 \cdot 5^3}{5^{-2}}$
11. $(2^{-4})^2$
12. $(3^3)^{-1}$
13. $(-10)^{-3}$ — $\frac{1}{(-10)^3} \Rightarrow \frac{1}{-1000}$
14. $(-3)^{-4}$ — $\frac{1}{(-3)^4} \Rightarrow \frac{1}{81}$
15. $(-11)^{-2}$ — $\frac{1}{(-11)^2} \Rightarrow \frac{1}{121}$
16. $(-2)^{-3}$ — $\frac{1}{(-2)^3} \Rightarrow \frac{1}{-8}$

II. Simplify the following expressions. Write answers using only positive exponents.

17. a^{-3} — $\frac{1}{a^3}$
18. $\frac{1}{x^{-2}}$ — x^2
19. $\frac{1}{s^{-3}}$ — s^3
20. $x^0 y^{-4}$ — $\frac{1}{y^4}$
21. $r^{-2}st^{-4}$ — $\frac{s}{r^2t^4}$
22. $8^0 x^3 y^{-3}$ — $\frac{x^3}{y^3}$
23. $h^{-3}k^5$ — $\frac{k^5}{h^3}$
24. $3x^{-1}$ — $\frac{3}{x}$
25. $\frac{x}{y^{-3}}$ — xy^3
26. $(x^{-2})^2$ — $\frac{1}{x^4}$
27. $\frac{a^{-2}}{b}$ — $\frac{1}{a^2b}$
28. $(y^4)^{-2}$ — $\frac{1}{y^8}$
29. mn^0p^{-4} — $\frac{m}{p^4}$
30. $(y^{-4})^0$ — 1
31. $y^{-7} \cdot y^9$ — $\frac{y^9}{y^7} \Rightarrow y^2$
32. $x^{-8} \cdot x^4$ — $\frac{x^4}{x^8} \Rightarrow \frac{1}{x^4}$
33. $(n^4)^{-1}$ — $\frac{1}{n^4}$
34. $x^{-8} \cdot y^4$ — $\frac{y^4}{x^8}$
35. $p^2p^0p^{-3}$ — $\frac{p^2}{p^3} \Rightarrow \frac{1}{p}$
36. $\left(\frac{s}{t}\right)^{-6}$ — $\frac{t^6}{s^6}$
37. $(z^{-3})^2$ — $\frac{1}{z^6}$
38. $\frac{x^0}{y^{-4}}$ — y^4
39. $\frac{y^{-1}}{y^4}$ — $\frac{1}{y^5}$
40. $\frac{x^{-2}}{y^{-3}}$ — $\frac{y^3}{x^2}$