

P.111 Zero + Negative Exponents

Jan. 16

Evaluate:

1. 5^0
 $= 1$

3. 3^{-1}
 $= \frac{1}{3}$

" $\frac{1}{3}$
" $\frac{1}{3}$

for a negative exponent, FLIP

8.

$$\frac{8^{-1}}{1}$$

$$= \frac{1}{8^1}$$

$$= \frac{1}{8}$$

13.

$$\frac{1}{3^{-1}}$$

$$= \frac{3}{1}$$

$$= 3$$

16.

$$\frac{2^{-3}}{1}$$

$$= \frac{1}{2^3}$$

$$= \frac{1}{8}$$

$$20. \quad \frac{1^{-4}}{1}$$

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

$$26. \quad \frac{1}{5^{-4}}$$

$$= \frac{5^4}{1}$$

$$28. \quad 7^4 \times 7^5$$

$$= 7^9$$

$$29. \quad 9^6 \times 9^{-4}$$

$$= 9^{6+(-4)}$$

$$= 9^2$$

32.

$$5^{-7} \div 5^{-2}$$

$$= 5^{-7 - (-2)}$$

$$= 5^{-5}$$

$$= \frac{1}{5^5}$$

$$= \frac{1}{5^5}$$

$$= -7 + 2$$

$$34. (3^3)^4$$

$$= 3^{12}$$

$$36. (8^{-1})^{-5}$$

$$= 8^5$$

39

$$3^{-5} \times 3^{-3} \times 3^2$$

$$= 3^{-5 + (-3) + 2}$$

$$= 3^{-6}$$

$$= \frac{1}{3^6}$$

$$41. \quad 8^4 \times 8^{-5} \div 8^{-2}$$

$$= 8^{4 + (-5) - (-2)}$$

$$= 8^{-1 + 2}$$

$$= 8^1$$

$$43. (-3)^{-6} \div (-3)^{-2} \times (-3)^4$$

$$= (-3)^{-6 - (-2) + 4}$$

$$= (-3)^{-6 + 2 + 4}$$

$$= (-3)^0$$

$$46. 2^4 \times 2^{-3}$$

$$= 2^{4 + (-3)}$$

$$= 2^1$$

$$49. 6^{-2} \div 6^0$$

$$= \frac{6^{-2}}{6^0}$$

$$\begin{aligned}
 51. 6^{-3} \div 6^{-3} &= 6^{-3 - (-3)} \\
 &= 6^{-3 + 3} \\
 &= 6^0 \\
 &= 1
 \end{aligned}$$

52.

$$\frac{(2^2)^2}{(5^3)^{-1}}$$

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

$$= 2^4 \times 5^3$$

$$= 16 \times 125$$

$$= 2000$$

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

$$2^4 \times 5^3$$

55.

$$\frac{(7^{-3})^0}{(0.1)^{-2}}$$

$$\frac{(7^0)}{(0.1)^2}$$

$$= \frac{1}{0.01}$$

56. $2^3 \times 2^{-2} \times 2^{-2}$

$$= 2^{3+(-2)+(-2)}$$

$$= \frac{2^{-1}}{1}$$

$$= \frac{1}{2}$$

57.

$$3^4 \div 3^5 \times 3^1$$

$$= 3^{4-5+1}$$

$$= 3^{-1+1}$$

$$= 3^0$$

$$= 1$$

HWK:

thru 54
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